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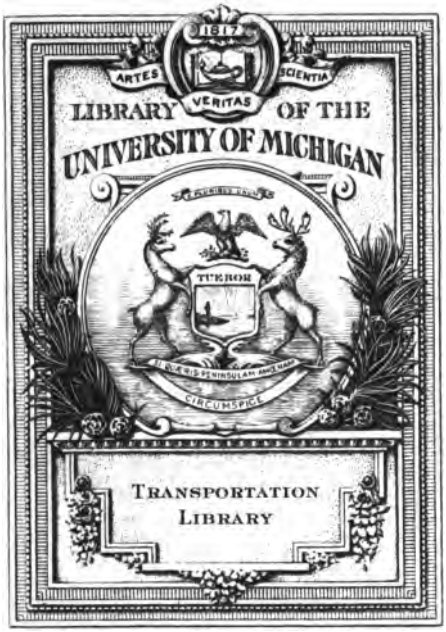
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MODERN ACCOUNTING

MODERN ACCOUNTING

ITS PRINCIPLES AND SOME OF ITS PROBLEMS

BY

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NEW YORK
D. APPLETON AND COMPANY
1909

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PREFACE

In the following treatise an attempt is made to present the principles of accounting. In doing so the details of technic, important though they are, are purposely omitted or treated with the scantest mention. The essence of accounting, from the author's view point, is the presentation, first, of a correct exhibit of the financial status of the concern at a given moment of time, and, secondly, a showing of the results obtained during a given period of time. The first is embodied in the Balance Sheet; the second in the Income or Profit and Loss statement.

In the ordinary routine of the accountant's toil there is, indeed, another function; that of keeping account of claims and property, in order to secure the concern against the loss which might arise from forgetfulness, carelessness or dishonesty. This phase of accounting attains its acme in governmental accounting where the essential thing is to insure the proper handling of vast sums. But this seems a matter of much less scientific interest and is not treated in this work.

The method of treatment, in general, has therefore been to consider how a given transaction is made manifest in the Balance Sheet, the goal which the accountant ever has in mind. The technical entries to be made in the journal or in other books of original entry are excluded. They are not of such importance for the forms in which such entries are made vary according to the needs of the office economy,

and still more because they are only the steps by which the Balance Sheet is formed. Keeping the latter constantly in mind, serves to make clear the logical significance of each transaction recorded. That being clear the technical entry to be made is an obvious matter.

The presentation of a correct view of the concern's financial status and of its past profits involves many points of theoretical interest and of practical importance. To present an intelligible view it is essential to have a rather definitely crystallized terminology so that the terms used with a technical meaning shall be definitely understood with the exact connotation intended. Unfortunately, despite the advancement made in accounting practice, there is a most embarrassing confusion in terminology, so that one can never be sure of just what is meant by a given account. Ampères and ohms, miners inches and foot pounds, have definite meanings free from misunderstanding. But the current terms of accounting: Reserves, Depreciation Fund, Manufacturing Costs, even Profits, are loosely and divergently used. More serious still is the uncertainty as to the correct principle to follow in many cases, as for instance in the valuation of fixed assets and the method of estimating depreciation.

In some cases it is possible to differentiate certain usages as bad, some methods as involving incorrect principles. But this is not always true and when in doubt there is no ultimate arbiter to whom appeal can confidently be made. In this dilemma it has, therefore, seemed advisable to show the existing variations rather than to attempt to formulate rigid rules. The comparative study of accounting practice will, perhaps, be a greater service to

accounting science than a more dogmatic treatise. Reference has accordingly been frequently made to the published accounts of corporations which presumably exhibit current usage, and to the leading English and American texts. But in addition considerable recourse has been had to other less obvious sources of information. These include the decisions of English and American courts, the commercial codes of Germany, France and Austria and the commentaries of the leading jurists of these countries. The legal provisions of the Continental countries are, of course, not binding on American practice. But they are of considerable significance in discussing the principles of accounting, for they embody the carefully expressed opinion of experts on many difficult problems.

Such attention to foreign authorities is all the more necessary since in this country far too little attention has been given to matters of principle. American accounting is famed for short cuts and practical efficiency. At the same time the accounts of American corporations, until very recent years, have been replete with questionable practices, oftentimes vicious in principle and misleading in their results.

While the work is mainly a discussion of the problems of practical accounting, it has seemed advisable to insert an introductory section on the theory of double entry bookkeeping. Those who are familiar with the literature of the subject need not be told of the author's indebtedness to J. F. Schaer whose clear writings have done much to put bookkeeping on a more rational basis. Of especial value has been that writer's: "Versuch einer wissenschaftlichen Behandlung der Buchhaltung."

The twofold classification of accounts herein adopted differs materially from the customary treatment in American text-books. The conventional division of accounts into real, personal and fictitious, as Jones pointed out in 1841, "renders all theorizing impossible, and shuts up every avenue to the more general principles of the subject on which the analysis of accounts so immediately depends." So too there is a marked divergence in the treatment of the terms Debit and Credit, the mere rules of thumb so generally used being abandoned for what, it is hoped, is not only more rational but actually of greater practical value to the student wrestling with the problems of elementary bookkeeping.

HENRY RAND HATFIELD.

OCTOBER, 1908.

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MODERN ACCOUNTING

CHAPTER I

THE THEORY OF DOUBLE ENTRY BOOKKEEPING

DOUBLE entry bookkeeping, the basis of all modern accounting, was first made known to the world in a mathematical treatise published in 1494 by Luca Paciolo. This work, the "Summa de Arithmetica, Geometria, Proportioni et Proportionalita," not only contained the first printed work on bookkeeping but also included the first European treatise on Algebra.

Appropriate to this early connection with algebra, double entry bookkeeping starts out with an equation. The recording of all subsequent business transactions consists in altering the form of the equation without affecting the equality of the two members. This original equation, or Balance as it is called in the bookkeeper's technical language, when reduced to its simplest form is:

The value of the various Goods one owns = The amount one is worth.

Or, to use shorter terms:

Goods = Proprietorship.[1]

Goods is here used in the technical economic sense of anything, material or otherwise, to which value attaches. The left-hand member of the equation therefore represents

[1] The term Proprietorship, as a collective term for all the accounts representing the "Amount one is worth" is adopted from Charles E. Sprague's most valuable "Philosophy of Accounts." It is better than other terms which have been used, as it is free from technical ambiguity.

a complete list or inventory of all valuable possessions; the right-hand member expresses the total Proprietorship, that is, the capital or net present worth of the proprietor.

This initial equation appears whenever a man first starts a set of books. It may be illustrated by a new business in which the proprietor starts with $5,000 cash on hand, the equation here being:

Cash $5,000 = Proprietorship $5,000.

For the present, consideration of debts owed may be postponed, and the proprietor may be assumed to pay cash on all transactions and not to borrow any money. With this limitation it must be clear that all possible business transactions, or all possible operations, whether purchases or sales, the payment of expenses, the receipt of rent or interest, the loss of property by fire or theft, the taking of profits by the proprietor, additional contributions to or withdrawals from the original capital; all operations of any form whatever which come under the cognizance of the accountant may be reduced to the following:

(*a*) Operations in which the *kind* of Goods owned is altered by exchange of Goods of one form for other Goods of equal value;

(*b*) Operations in which the *amount* (value) of Goods is either increased or decreased.

Furthermore, it is to be noted that a business transaction may combine the two changes so that there is a third class:

(*c*) Operations in which the kind of Goods owned is altered at the same time that the amount (value) owned is either increased or decreased.

These three classes of operations may be respectively called: (*a*) Exchange or pure exchange transactions, (*b*) Transactions affecting Proprietorship (or Profit and Loss transactions) and (*c*) Mixed transactions.

Exchange transactions evidently do not alter the value of either member of the original equation. If the proprietor buys 25 horses for $2,500 cash his books no longer show:

Cash $5,000 = Proprietorship $5,000, but

Cash $2,500 + Horses $2,500 = Proprietorship $5,000.

So with any subsequent transactions which involve the exchange of goods of equal value, it is evident that there can be no change in total value.

This may be expressed algebraically: If like values are both added to and subtracted from one member of an equation, the value of the equation is not altered. In this case the original equation takes the form

Cash $5,000 + Horses $2,500 — Cash $2,500 =
Proprietorship $5,000.

Transactions which involve a pure exchange take place whenever goods are purchased or whenever they are sold at cost price: where cash is deposited in the bank or otherwise invested; and in debt transactions to be considered later.

On the other hand, it is true that any transaction coming under *b*, changing as it does the total value of the Goods owned, must be accompanied by an equivalent change in the value of the other member of the equation. For instance, if the proprietor in the case mentioned should lose ten horses by death, there would no longer be the equation

Cash $2,500 + Horses $2,500 = Capital $5,000

for the Goods now owned are Cash $2,500 + Horses $1,500 which do not equal the original Proprietorship of $5,000.

In order to represent the correct position produced by the loss of the horses there must, therefore, be an equivalent change made in the member representing Proprietor-

ship. The disappearance of the horses was at the same time a diminishment of the amount the proprietor was worth. This may be expressed algebraically by subtracting from the original equation another equation representing the loss of horses, thus:

Cash	$2,500	+ Horses	$2,500	= Proprietorship	$5,000
		Horses	1,000	= Proprietorship	1,000
Cash	$2,500	+ Horses	$1,500	= Proprietorship	$4,000.

On the other hand, if the proprietor rents his horses receiving therefor $100 in cash his statement will then show Cash $2,600 and $2,500 worth of horses. This will be correctly shown if to the original equation is added another equation representing the change produced by the rent transaction thus:

Cash	$2,500	+ Horses	$2,500	= Proprietorship	$5,000
Cash	100.			= Proprietorship	100.
Cash	$2,600	+ Horses	$2,500	= Proprietorship	$5,100.

Transactions which thus affect the total value of the goods owned, and necessitate a change in Proprietorship occur:

(1) Whenever goods are surrendered without receiving an equivalent value in exchange. This occurs when there is a payment of expenses in distinction from a purchase of goods; when there is a loss, or when there is a withdrawal of cash or other property by the proprietor, and

(2) Conversely whenever additional goods are obtained without a corresponding exchange, as when clear profits are received, or further contributions are made by the proprietor.[1]

[1] The purchase of goods on credit does not come under this head but is an exchange transaction. The obligation to pay the debt, given to the vendor is a Good given in exchange. At present, however, only cash transactions are considered, debts being discussed later.

All the principles of double entry bookkeeping can be observed in an extremely simple set of accounts. This may be illustrated by a set in which only the most rudimentary differentiation is made in the Goods, Cash being placed in one account in contradistinction to all other goods which are included in another account. In such a system the accounting of a trader who (1) starts in business with $5,000 cash, (2) buys 25 horses for $2,500 and a farm for $2,000, (3) loses 5 horses by death, (4) rents his horses for $100, and (5) sells the remaining 20 horses for $3,000 will appear as follows:

FORM 1.

TRANSACTION.	Cash Account.	Miscellaneous Assets Account.	Proprietorship Account.
Starts business with cash	+$5,000		= +$5,000
Buys horses and farm for cash	− 4,500	+$2,500 (Horses) + 2,000 (Farm)	= 0
5 horses die		− 500 (Horses)	= − 500
Rents horses for cash	+ 100		= + 100
20 horses sold	+ 3,000	− 2,000 (Horses)	= + 1,000
Closing condition	$3,600	+$2,000 (Farm)	= +$5,600

The differentiation here made, between cash and all other goods is an important one because Cash is, in many respects, the most important form of Goods and also (or therefore) most likely to be stolen unless carefully accounted for. But in any practical set of books there is of course further classification of the Goods.

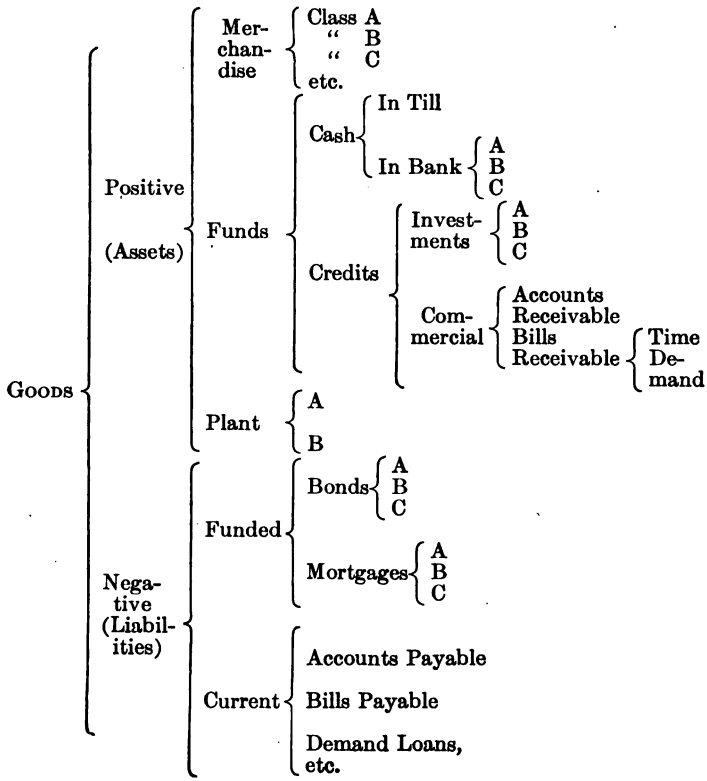
Where sales are not all for cash the account, perhaps, even more important than the Cash account is one indicating the amounts due from customers. This is especially necessary where the bill is merely charged up against the customer's account, there being no other evidence of the debt than that furnished by the trader's books. A primi-

tive form of such an account is the slate on which the village tapster " chalks up the P's and Q's " consumed by his regular patrons. But in any systematic business, accounts must be kept showing claims of all kinds, both the charge accounts and those evidenced by notes given by the customer. These latter can again be divided into secured and unsecured, foreign and domestic, time and demand, or any other classification appropriate to the character of the business transaction. Thus the differentiation is continued, real property separated from personal, merchandise distinguished from plant, and still further subdivided into different classes as for instance, dry goods and groceries, each of these divided into groups such as: silk goods, linens, notions; flour, tea and coffee, sugar, and thus indefinitely according to the nature of the business, the taste of the proprietor and the particular purpose for which the accounts are kept. No rule can be laid down as to the degree to which ramifications may be made, as each additional subdivision gives to the proprietor additional information valuable in the conduct of the business. The only limit is that at some point, varying with the particular business, the expense of getting the additional information, requiring as it does more books and more clerks, is greater than the value of the information thus gained. Somewhat before this point the process should stop.

In certain incomplete systems of accounts not only is a differentiation made of particular assets, but these selected assets are alone considered, all other Goods being altogether excluded from the account books. Thus in that bane of domestic peace, the household expense book, as it is generally kept, Cash is practically the only asset considered. No difference is made between a diminution of Cash which represents an actual loss, as when it is dropped on the street, given in charity, or paid for taxes, and one which is an exchange as when paid for a permanent asset, for in-

stance a diamond. Cash only is considered; other assets, so far as the account book is concerned are nonexistent. Another stage is in the accounts frequently kept by small traders by so-called single entry, in which the only assets shown are Cash, and the claims against persons. Other assets are entirely excluded from the books. But in systematic accounting while differentiation of assets may be carried to any extent, everything owned must be shown in the books and must balance with the items representing Proprietorship.

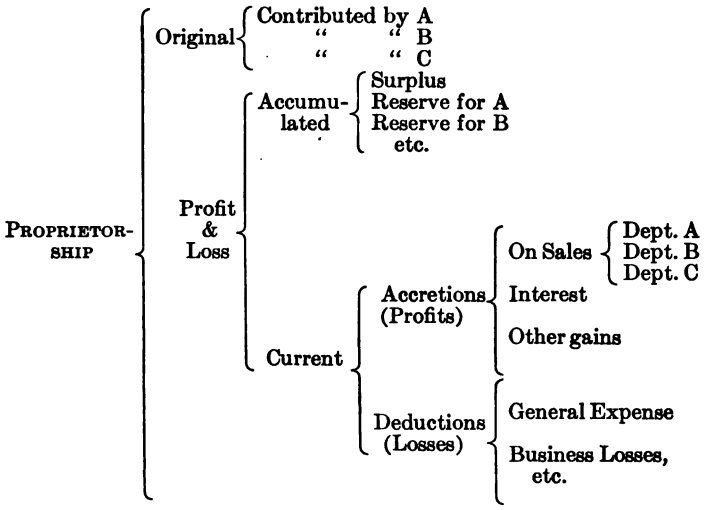
The line of differentiation of Goods accounts may be represented as follows:



This scheme is merely illustrative, and is not universally applicable. Not only do different enterprises, say a bank and a railroad, require different systems of classification, but the individual establishments in a given trade, say two dry-goods stores, also need, each its own system, adapted to its particular organization and business methods. For the sake of completeness the above scheme subdivides Goods into Positive and Negative Goods. The latter term has not yet been used in the text, but the subject is discussed at some length on page 13.

On the other side a similar division of the Proprietorship account appears. The first and most obvious division is between the capital at the beginning of the business and subsequent additions and subtractions, or between the Capital and Profit and Loss. This distinction is of fundamental importance as it indicates the degree to which the enterprise is successful. As the measure of success is expressed in the percentage which the profits gained in a single year bear to the initial capital, the Profit and Loss Account is ordinarily a temporary one. At the end of each fiscal period it is added to the main Proprietorship account, or otherwise cleared from the books. During the fiscal period the Profit and Loss account may be further subdivided into accounts representing items which decrease the net wealth and those which cause an increase, that is, into accounts which show expenses, or losses, and those which show earnings.

Thus there may be a general expense account, or this may be divided into Wages, Rent, Interest, Light, Fuel and so forth. Each of these may be subdivided to correspond with subdivisions of the business. Profit, too, is divided into its various elements, such as Interest, Profit on sale of Dry Goods, Profit on sale of Groceries, and so on *ad libitum*. Such a division of the elemental Proprietorship account is indicated in the following diagram:



It should be noted that there are two distinct types of differentiation of accounts. In one class a subdivision is made into several coördinate groups, as when a Merchandise account is divided into Groceries, Dry Goods, Hardware, etc. In the other the subdivision of an account is such that all negative items are placed in one account, all positive items in another. This is done where a general Profit and Loss Account is temporarily split up into two accounts, one showing Losses and the other Gains.

The division of accounts into two distinct groups, one representing Goods and the other Proprietorship, constitutes the very essence of double entry bookkeeping. Yet the clear enunciation of this principle seems not to have been made until about 1830 when it was set forth by Thomas Jones, an American accountant, in lectures delivered in New York. He showed plainly the two sets of accounts and pointed out that they are distinct in both content and purpose. The Goods accounts make record of

the various items of wealth positive and negative, showing all the details of assets and liabilities. But the other set, consisting of the original Proprietorship and the Profit and Loss accounts, serve to exhibit the amount of capital invested at the beginning of the period and the gain or loss accruing during that period. By means of the various subdivisions, as shown in the above diagram, the second set of accounts shows not merely the total net profits or loss, but as well the various sources of profit, the different lines of expense. These two distinct sets of accounts must, however, agree in their results. Evidently the original capital plus the net profits, which is the showing of the Proprietorship accounts, must at all times agree with the net assets, which are shown by the Goods accounts. It is this agreement between the Proprietorship and Goods accounts which serves as an evidence of accuracy, and constitutes the characteristic merit of double entry bookkeeping. Books might be kept containing only one or the other of these two opposed sets of accounts. Single entry bookkeeping contains certain Goods accounts but omits all Profit and Loss items. On the other hand, the bookkeeping of governments and of charitable organizations have for their main, if not their sole purpose, the exhibition of income and expenses, that is, of certain Proprietorship accounts. But in systematic commercial bookkeeping a double record is kept, both Goods and Proprietorship are shown in full, and the two sets of accounts by agreeing serve to verify the results.

The accounts presented have thus far been either pure Goods accounts or pure Proprietorship accounts. Each account showed either unmixed Assets or unmixed Proprietorship. But in business practice many transactions are Mixed Transactions falling under class *c*, page 2, where there is both an exchange of goods and an element of profit. To illustrate: A purchase of goods is a pure exchange

transaction, for the value of the goods is uniformly taken as equaling the cash paid therefor, say one hundred dollars. A receipt of interest is a pure profit transaction, for the lender still holding his right to the principal in undiminished value receives an additional Good, that is, ten dollars cash paid him as interest. But the sale of merchandise should be a mixed transaction, for the merchant exchanges merchandise costing him only $100 for cash amounting to $110.[1]

The mixed transaction can be correctly portrayed by the use of unmixed accounts as was done in the accounts on page 5. Here the $3,000 cash received is in fact divided into two constituent parts: return of cost price of horses $2,000 and additional cash received as profit $1,000. The "Miscellaneous Assets" account therefore represented that horses worth $2,000 were parted with, the cash account showed the receipt of $3,000 and Proprietorship was at once credited with $1,000 Profit. The tendency to keep the Goods accounts thus unmixed is increasing in business practice, but it is by no means universal, nor even preponderant. When goods are sold it is frequently impossible, and generally difficult, to determine how much the sold goods cost and how much of the selling price represents profits. The salesman knows definitely the price called for by the bill of sale, but it would often take much complicated reckoning to determine the actual cost of the

[1] Theoretically it may be held, that the profit transaction preceded the exchange, that just before the sale the merchandise appreciated to the extent of ten dollars, and the increased value of the goods must be balanced by taking recognition of the profits. After this there is a pure exchange; merchandise worth $110 being exchanged for an equal value in cash. But such a conception is at variance with ordinary commercial expression, and is thoroughly opposed to what is a cherished precept of accounting practice (even though it is not a principle of accounting theory) namely: that it is dangerous to recognize appreciation of goods in the owner's hands.

miscellaneous assortment of merchandise sold. Consequently the custom in ordinary mercantile establishments is to treat the Mixed Transaction as if it were a pure Exchange Transaction, and in the accounts to represent it as though the goods parted with were of the same value as the cash received, neither profit nor loss being shown at the time. Thus a merchant having capital of $2,500 all invested in merchandise, and selling for $110 a bill of goods which cost him only $100 would, if his account were kept unmixed, show,

FORM 2.

TRANSACTION.	Merchandise.	Cash.	Capital.	Profits.
Starts in business with.....	+$2,500		= +$2,500	
Sells Mdse. at profit.....	− 100	+$110	=	+$10
Closing condition.....	+$2,400	+$110	= +$2,500	+$10

But in ordinary practice the accounts would appear thus:

FORM 3.

TRANSACTION.	Merchandise.	Cash.	Capital.	Profits.
Starts in business with.....	+$2,500		= +$2,500	
Sells merchandise.....	− 110	+$110	=	0
Closing condition.....	+$2,390	+$110	= +$2,500	

The Capital account here stays unchanged at $2,500 and no entry at all is made in the Profits account. The correct equation is really

Merchandise $2,400 + Cash $110 = Capital $2,500 + Profits $10.

The equation shown by the book is:

Merchandise $2,390 + Cash $110 = Capital $2,500 + Profit 0.

which is incorrect in two particulars. It shows merchandise worth $2,390 instead of $2,400, and the total proprietorship, that is, Capital + Profits, as $2,500 instead of $2,510.

It is only for convenience' sake that this confessedly incorrect statement is made. It is necessary at some later time to correct the errors. This is ordinarily done by "taking stock," that is, ascertaining the amount and value of the merchandise actually on hand and making an entry in the books to correct the wrong showing of the merchandise account. This, of course, necessitates another entry at the same time in the Profits account in order to maintain the proper equation, or balance of the books. In the example given above, inspection of the cash drawer shows $110 as called for by the Cash account. But an inventory of the merchandise on the shelves shows so many yards and so many pounds all which at cost are worth $2,400. But the Merchandise Account in the books shows $2,390, a misstatement which must be corrected by increasing the sum $10. Here the book value of the assets is increased by $10. Clearly there is no exchange. Nothing else is diminished, and an increase in the total book value of all the good accounts must, if the equation is to be maintained, be accompanied by a corresponding increase in one of the Proprietorship accounts, in this case evidently in the Profits account. The significance to bookkeeping of thus relying on an inventory to secure correct results is extremely great, and the principles of making such an inventory are discussed at length in Chapter IV.

So far the discussion has been based on the assumption that the merchant does business entirely on his own capital, that he has not borrowed money, nor incurred any other obligation. In actual business this is seldom true, and it is accordingly necessary to see how liabilities of the proprietor are treated in accounting. If one has a stock of merchandise on hand, worth $10,000, half of which was

paid for in cash and the other half bought on credit, the equation cannot stand:

Goods on hand $10,000 = Proprietorship $5,000.

It is however perfectly correct to make the statement:

Total goods on hand $10,000 — Amount due to creditor $5,000 = Proprietorship $5,000.

Proprietorship represents the net wealth, not the gross assets of the proprietor. It is true that legally the goods bought on credit or with borrowed money are the property of the purchaser, belonging absolutely to him. But economically there is a divided ownership and the credit instrument is merely a form of title to an undivided half of a certain mass of valuable goods. Liabilities,—that is, debts of any kind,—may therefore be considered as Negative Goods, the assets being Positive Goods. While the proprietor holds and legally owns $10,000 worth of assets he also has $5,000 worth of Negative Goods which must be subtracted from the Positive Goods to determine the net proprietorship. But just as in algebraic equations a negative term in one member may be transferred to the other member thereby becoming positive, so in the bookkeeping equation the form is ordinarily

Goods $10,000 = Proprietorship $5,000 + Debts $5,000.

This simple conception of negative items is of great importance to bookkeeping, applying not alone to the relationship of debts, but to other subtractions which are made for technical purposes. In accounting, it is always legitimate, whenever a sum is to be subtracted from an amount appearing on one side of the equation, to place it instead as a positive item on the other side. It is entirely immaterial whether one writes

$$a - b = c \text{ or } a = c + b.$$

On these few principles rests the whole structure of double entry bookkeeping. Summing up:

1. There is an initial equation made between Goods possessed and Proprietorship.

2. Either side of this equation may be ramified indefinitely to suit the needs of the individual business.

3. Negative items appear, which instead of being immediately subtracted may be placed as positive items on the other side of the equation. Thus—e. g., items representing Negative Goods or debts are not subtracted from the Positive Goods (assets), but are transferred to the other side of the equation and added to the items representing Proprietorship.

4. In all subsequent transactions it is necessary to preserve the equation as follows:

(*a*) An addition to one of the Goods account may be offset by a subtraction from another Goods account.

(*b*) An addition to, or subtraction from one Goods account may be offset by a similar addition to, or subtraction from a Proprietorship account.

(*c*) Addition and subtraction are here used in the algebraic sense, a subtraction from a negative account being equivalent to addition.

CHAPTER II

THE THEORY OF DOUBLE ENTRY BOOKKEEPING (*continued*)

THE discussion has thus far been in most general terms and with no reference to the details of bookkeeping technic. This has been done advisedly, in order that the principles might be presented unrelated to conventional practice. In just what form the equation described is to be written, how the books are to be ruled and paged, how items are to be gathered together for adding, whether columns are to be run perpendicularly or horizontally, whether items are to be entered directly into a particular book or to be transferred to it from another book of original entry; all these and many other details may be important in securing efficient bookkeeping. They may affect the ease with which the record of business operations is made and transcribed, or the readiness with which certain facts are ascertained from an inspection of the books; they may aid in preventing error and detecting fraud. But after all, these are variations in technic, not matters of principle. The essential thing in any form of double entry bookkeeping is that there is somewhere a number of items representing what are here called Goods accounts, and somewhere in the books another set of items which are here called Proprietorship accounts. The sum of these Goods items, taking in account the Negative Goods, or debts, must equal the algebraic sum of the Proprietorship items.

Nevertheless the points of more general acceptance in bookkeeping convention should not be neglected, although it must be remembered that even the most deepseated con-

ventions in bookkeeping could all be violated without, in the least, affecting the essentials of the system.

In whatever form the first record of the transaction is made, it is customary to have the items of similar nature gathered together on a page of a book (which may indeed be loosely bound, or even consist of unbound sheets or cards) which is called the Ledger. Although legally the ledger is treated as an inferior book, its validity in court being less than that of the books from which the ledger entries are ordinarily transferred, it is in bookkeeping the most important, the essential book, as is indicated by the names which have been given it in other tongues, *Libro Mœstro, Grand Livre, Hauptbuch.* It is possible to use the ledger alone. This was customary among the earlier Venetian accountants and even to-day it is the method occasionally employed, with correct results, for keeping simple accounts.

But in a large business the use of a ledger alone is clearly impossible, and even in a small establishment such a system, while possible, is unsatisfactory. The chief trouble is the difficulty of detecting errors. The use therefore of some chronological record of transactions, in contradistinction to the ledger where entries are classified, while multiplying the writing to be done is really an economy. It is easier to make the original entries in such a book; the entries are less liable to error; an error once made can more easily be detected.

In each of the ledger accounts there will be certain items to be added, certain other items to be subtracted. In early bookkeeping these items were all listed in a single column, addition or subtraction being indicated. This is the form which has thus far been used in the pages of this treatise; it is in some cases still used in modern bookkeeping practice where the items to be subtracted are generally differentiated by being written in a different colored ink.

But it is apparent that with a single column there is a great danger that the bookkeeper will make the mistake of adding where he should subtract or of subtracting where he should add. It was therefore a very valuable, though a simple device, to separate the items to be added from those to be subtracted. Thus the cash account given on page 5 instead of appearing as it does there in the form:

FORM 4.

Cash Account.

Amount with which business started	+$5,000
Paid for Horses	− 2,500
Paid for Farm	− 2,000
Received for Rental	+ 100
Received for Horses	+ 3,000
Amount on hand	+$3,600

is presented with positive and negative items separated thus:

FORM 5.

Cash Account.

+		−	
Amount with which started business	$5,000	Paid for Horses	$2,500
Received for Rental	100	Paid for Farm	2,000
Received for Horses	3,000		$4,500
Total	$8,100	Balance	3,600
Balance	$3,600		$8,100

The word "Balance" as here used signifies merely the difference between the sum of the positive and the sum of the negative items, or the algebraic sum of all the items. It is customary, but by no means necessary to add the "Balance" to the smaller of the two sides so as to produce the same total at the foot of each column. This is less rigidly done in recent years than formerly, as in many ledgers special column rulings (described in Chapter XIX) render the formal balancing of the accounts unnecessary.

Certain of the accounts thus presented in double column will represent positive Goods or Assets. It is a convention well-nigh unbroken, although its violation in no way affects the results to be gained by double entry bookkeeping, to list the items representing Goods on hand, or subsequently acquired, in the first or left hand column, the subtractions therefrom in the second, or right hand column. In all Assets accounts the left hand column is therefore the positive column, the right hand column containing the negative entries.

It is a further convention applicable to all accounts to call the left hand column " Debit " and the entries therein Debit entries. The act of making a Debit entry is called Debiting or charging an account. The right hand column is called " Credit," the entries therein Credit entries, and the act of making such an entry Crediting an account.

Furthermore the normal condition of all Asset accounts is to have positive—that is, a Debit excess of values. Assets, things which one possesses evidently are positive. One may lose them all, or pay them all away but normally the limit is zero. Fire may burn all but not more than all of the merchandise; one may pay out all the Cash in the drawer, but it is difficult to squeeze it so as to make it pay out more than was put in. Thus, while in rather technical bookkeeping entries an asset account may show an excess on the credit side, such is not the normal condition, and always requires interpretation.[1]

Another class of accounts will represent the Proprietorship accounts and these too will be divided into two columns. The Proprietorship account presented on page 5

[1] A good illustration is where the cash account is kept so as to include not merely cash in the till, but also cash deposited in the bank. Now, while the till cannot give out an excess, it is sometimes possible to pay out by check in excess of the amount on deposit. In such a case the Cash account, normally the highest type of a pure positive Goods (Assets) account may show a negative balance.

FORM 6.

Proprietorship Account.

Original capital	+$5,000
Loss by death	− 500
Profit by rental	+ 100
Profit by sale	+ 1,000
Net proprietorship	+$5,600

becomes

FORM 7.

Dr. (−) *Proprietorship Account.*		*Cr.* (+)	
Loss by death	$500	Original capital	$5,000
Balance	5,600	Profit by rental	100
		Profit by sales	1,000
Total	$6,100	Total	$6,100
		Balance	$5,600

A striking contrast between the account showing an asset and one indicating Proprietorship is to be noted. In the former the positive items appear in the left hand column and are hence Debits; in the Proprietorship accounts the positive items appear in the right hand column and are hence Credits. In one class of accounts therefore Debits are positive and in the other class they are negative. This confusing use of the terms Debit and Credit has been one of the most perplexing points in accounting practice.

Undoubtedly the terms were originally used in their strict sense of indicating a Debtor or a Creditor and in accounts showing such relationships they still maintain their original meaning in full force. If an advance of $100 is made to A it constitutes him a Debtor to that amount, and this is shown by charging or Debiting his account, which is conventionally done by an entry in the left hand side. Should A repay the $100 it of course cancels the charge, which is shown by entering $100 in the

right hand column. If he in turn advances more than the $100 it transforms him from a Debtor to a Creditor, so that it is not unnatural that with Debits on the left hand the right hand column should be called Credit. This original meaning of Debit and Credit is still preserved in personal accounts. But the application of Debit and Credit to other classes of accounts is more difficult of explanation.

It may not be unreasonable for the merchant having become accustomed to list that most important class of assets, claims against customers, as Debits, to treat other assets in the same manner. Most writers have gone further in attempting an explanation and have assumed that Debit and Credit in all accounts, whether representing debt relations, or other Assets, or even Proprietorship, show a relationship of Debtor and Creditor. This is accomplished by a rather forced system of personification. Thus for instance Cash, or Merchandise is personified as being a Cashier or a Store Keeper, who is in turn indebted to the business for all values which have gone into his hands. On the other hand the Proprietor, contrary to the legal fact, is assumed to be a Creditor of the business. These are perhaps not so bad, but when the same theory of personification is carried to such accounts as Expense, Profit and Loss, etc., it becomes difficult of application and of less than doubtful value. The better theory rejects all this personification and, as is done in this book, treats the two sets of accounts as representing two different conceptions, each of which has its own value and meaning, and in which Debit and Credit are used conventionally with differing signification.

Thomas Jones, writing about seventy years ago, said: "All debits are not sums owing to us, nor are all credits sums we owe. Some debit items are owing to us, others (Stock) are sums withdrawn by us; some (Merchandise) are sums paid, others (Cash) are sums received; and the

credit items also stand for equally dissimilar facts. From which it must be evident that these terms are used arbitrarily, and any attempt to exhibit them in one uniform relation of indebtedness must necessarily oblige us either to use language of corresponding ambiguity, or resort to the personification of things which not only have no existence but the indebtedness of which cannot possibly have any apparent influence on the end we aim to accomplish. As names, enabling us to designate which side of any account we may refer to or speak of, they answer our purpose; and so would the terms blue column and red column, equally well, if custom permitted their use. In personal accounts they bear a literal meaning; and by analogy they have been extended to all other accounts; but the relations which constitute that analogy are too obscure to be of use as a guide to the student, and are more calculated to mystify than explain the subject." [1]

And Colonel Charles E. Sprague in his " Philosophy of Accounts " says that those who make such a personification of the business have been " misled by the lazy habit of bookkeepers in calling all Credit balances liabilities although they know that some of those balances are not liabilities. Even admitting that there is a fictitious entity it *owes* nothing to the real owners " (p. 33).

While it is true that most of the intervening authors present unquestioningly the naïve personalistic theory, it is interesting to note that Jones who was the first, and Sprague the latest and most penetrating American theoretical writer are thus in accord. And on their side are found many of the leading European authorities, among whom may be mentioned Hügli and Schaer.

Reference has been made to the confusion caused by Mixed Accounts,—that is, accounts in which the element

[1] Principles and Practice of Bookkeeping, p. 21.

of Profit is entered without separation from the exchange element. Thus where merchandise is purchased for $100 the Merchandise account is debited with that amount. If half the Merchandise is sold for $75 the account is ordinarily credited with that entire sum, instead of crediting Merchandise with $50 and Profit and Loss with $25. This results in a balance in the Merchandise account which does not show the value of the unsold stock, but that sum less the profits on the goods sold. Mixed accounts are cleared at intervals by crediting the account with the inventory value of goods on hand, leaving a difference between the total debits and the total credits of the account, corresponding to the profits realized. The inventory being brought down as the balance on the new Merchandise account, that again starts out as a pure Goods account.

This may be illustrated algebraically as follows:

The cost price of the merchandise (C) = Cost of Merchandise sold (S_1) + Inventory (I).

Amount received for sales (S) = Cost of Merchandise sold (S_1) + Profit (P).

Therefore C − S = I − P. But C − S is the Balance (B) shown in the Merchandise Account before the introduction of the Inventory. Hence I − B = P. The crediting of the Inventory is equivalent to subtracting the outstanding balance, so that the remainder indicates the amount of Profits.

The reversal of the positive sides in the two classes of accounts (Goods accounts and Proprietorship accounts) is of considerable importance in the technic of bookkeeping. It has already been shown that the fundamental equation running through all accounting is one in which Goods, or, ignoring debts, Assets equal Proprietorship. But assets are conventionally listed in the left hand column and hence

show Debit excesses or balances. Proprietorship is conventionally listed in the right hand column and hence the balances are Credits. Consequently the fundamental equation is one in which

Assets (Debits) = Proprietorship (Credits)

so that there is an equivalence not merely between Assets and Proprietorship but also between Debits and Credits. The significance of this is discussed on a following page.

In addition to the two classes of accounts just mentioned—namely, accounts showing Assets and normally having debit excesses, and Proprietorship accounts with a normal credit excess, the scheme of accounts contains two other groups referred to on page 13. These are Negative Goods accounts, of which Debts Payable may be taken as a type, and Negative Proprietorship accounts, typified by the Expense account. Considering first the Negative Goods accounts it is seen that they are items which might logically have been entered to the credit of some asset account. To illustrate: If a piece of real estate is purchased for $20,000, of which $15,000 is paid in cash and the balance is still due, it would not be illogical (although the practice is condemned by accountants, and in cases, is even considered fraudulent misrepresentation) to record the transaction thus:

FORM 8.

Dr. (+)	*Real Estate.*	(−) *Cr.*
Land and buildings..... $20,000	Due on purchase price..... $5,000	

in which the debt appears as an immediate subtraction from the total value of the property. But for the sake of clearly showing the exact status, it is much better to separate these two items, thus:

FORM 9.

Dr. (+)	*Real Estate.*	(−) *Cr.*
Land and buildings $20,000		

FORM 10.

Dr. (+)	*Debts Payable.*	(−) *Cr.*
		Due on real estate..... $5,000

This not only shows the present situation more clearly, but also allows for further details, for the Credit column of the Real Estate account can now show other deductions from the value of the Real Estate quite different from the unpaid portion of the purchase price. Thus if fire damages the building to the extent of $1,000 the Real Estate account will show:

FORM 11.

Dr. (+)	*Real Estate.*	(−) *Cr.*
Land and building..... $20,000		Damage by fire..... $1,000

The Debit column of the Debts Payable account can be used to show payments on account thus:

FORM 12.

Dr. (+)	*Debts Payable.*	(−) *Cr.*
Paid on account..... $1,000		Due on real estate..... $5,000

The showing thus made is much more explicit than if all four items were lumped together thus:

FORM 13.

Dr. (+)	*Real Estate.*	(−) *Cr.*
Land and building..... $20,000		Due on purchase price..... $5,000
Paid on account..... 1,000		Loss by fire..... 1,000

although in both methods the net assets must be the same $15,000.

In so far as debts are considered as subtractions from assets they must appear in a credit column, for it is in that column that any deductions from assets appear. But a cleavage takes place, and a separate account is established to represent debts. The mortgage shown in Form 8 no longer appears in the credit column of the Real Estate account but in the credit column of a separate Debts Payable account. Every new debt incurred or every addition to outstanding debts necessarily appears in a similar column, while any debt paid, or otherwise canceled is placed among the debits, for here as elsewhere in accounting the two sides of any account are opposed one to the other and tend one to cancel the other. A statement of the Goods would therefore show:

Real Estate $20,000 + (— Debts $5,000) = $15,000

for by the simplest algebraic principle the effect of adding a negative is the same as subtracting.

But subtraction is at best a clumsy process, and again by ordinary algebraic principles it is customary to transfer all such negative items to the other member of the equation with an accompanying change of sign, so that the equation becomes

FORM 14.

Real Estate		=	Proprietorship		+	Debts Payable	
Dr. (+)	*Cr.* (−)		*Dr.* (−)	*Cr.* (+)		*Dr.* (−)	*Cr.* (+)
$20,000				$15,000			$5,000

It follows therefore that in all accounts indicating

debts the balance is normally on the Credit side. And while it is true that a credit in a debt account indicates a subtraction from the total assets of the proprietor, yet in itself the Credit side of the Debt account may be considered the positive side. This is true in the sense that an existing debt appears on that side, and that the cancelation of a debt is performed by making an entry among the Debits. In form therefore the Debt or Liability accounts, as they are ordinarily called, agree with the Proprietorship accounts, in having normally a credit balance. Agreeing thus with the Proprietorship accounts they necessarily differ from the Asset accounts which normally have a Debit balance. While this may be a little confusing at first to the student it is in perfect accord with algebraic principles and should offer no permanent difficulty.

The uses of Debit and Credit in the various classes of accounts may be represented schematically thus:

	Assets.	Proprietorship.	Debts.
Debit	+	−	−
Credit	−	+	+

All that has been said regarding the Negative Goods accounts can be said, *mutatis mutandis*, of the Negative Proprietorship accounts, of which expense is taken as type. An expense being an outlay of goods (e. g., cash) without the receipt of some other equivalent Good [1] it can only sig-

[1] From the economic viewpoint even an expense involves the exchange of equivalents, but this is for convenience' sake, disregarded by the accountant. For instance the wages paid to a watchman is treated as an expense, for the services which he gives in return, are not considered as a "Good" to be taken into account. Even when there is a tangible equivalent received in return for the payment the accountant may at times disregard it in his accounts, as for instance, the cost of repainting a house is treated as an expense, although for part of the money expended there was received an equivalent value of white lead.

nify that the total Proprietorship has been lessened. A diminution of the Proprietor's capital can be indicated by debiting the Capital account thus:

FORM 15.

Dr. (−)	*Proprietor's Capital.*	(+) *Cr.*
Expenses paid..... $500	Original capital.....	$15,000

but it is more satisfactory temporarily to segregate such Expense items, putting them into a separate account, and transferring this account, which must normally have a Debit excess, to the left hand member of the equation. Here it can conveniently be added to the Asset accounts which similarly have a Debit excess. Thus all Negative Proprietorship accounts, Expense, Profit and Loss (where there is a deficiency), and other similar accounts have the Debits in excess. In this respect they resemble the Asset accounts, and consequently are in contrast to the Capital account and to those showing Debts.

The equation of accounts, first given

Goods accounts (Debit) = Proprietorship account (Credit)

becomes:

Assets (Debit) − Debts (Credit) = Capital account (Credit) + Profits (Credit) − Negative Proprietorship accounts (Debit)

and by transposition:

Assets (Debit) + Negative Proprietorship accounts (Debit) = Capital account (Credit) + Profits (Credit) + Debts (Credit)

or finally as values are expressed in figures, and can more conveniently be added vertically than horizontally, the equation becomes:

FORM 16.

Debit		*Credit*
Assets		Capital
Expenses		Profits
Loss, etc.		Debts, etc.
Total Debits	=	Total Credits

In any set of books therefore the total debits should equal the total credits and this is true whether the total of all debits is compared with the total of all credits, or whether the comparison is made between the sum of debit balances and the sum of credit balances. In the routine of bookkeeping this is of great service, furnishing the most frequently used criterion as to the correctness of the books. Without inquiring further as to the nature of the accounts, or the significance of the various outstanding balances, the bookkeeper ascertains at regular or frequent intervals whether the Debits and the Credits in his ledger are equal. If this is the case the ledger is said to balance. For ordinary purposes such a balancing is taken as evidence, inconclusive though it may be, that there are no errors in the bookkeeper's work.

Certainly a ledger is incorrect so long as it fails to balance, but the evidence from balancing is not conclusive. It does show that there has been a Credit for every Debit. But it does not show whether a transaction which should have been entered is altogether omitted; it does not indicate transpositions which may have been made, nor errors of equal amount made in both the Debit and Credit posting. It does not show that an item has not been entered in Merchandise which should have gone into Real Estate which would make a wrong showing of the kind of assets held. More unfortunately it does not show whether items have gone say into Real Estate which should have been entered in Expense, which would cause the more important

double error of misrepresenting the total value of Goods and showing an incorrect net Proprietorship.

A system of accounts in which similar items are classified and grouped, and in which the Debits always equal the Credits contains all the formal requirements of double entry bookkeeping. To keep such a set of accounts it is necessary to understand clearly the nature of each transaction. If it is an actual business transaction in contradistinction to a mere act of classification, it must affect one of the Goods accounts, either Assets or Liabilities. If the total Goods are increased or decreased, one of the Proprietorship accounts must be similarly affected. If there is no change in the total Goods a change in one of the Goods accounts must evidently be balanced by a contrary change in another Goods account. If any one of the assets shows an increase it must evidently be Debited, which compels a corresponding credit elsewhere. By keeping clearly in mind the nature of the accounting system and that it is attempting to present a true equation between Net Goods and Net Proprietorship, there need be no great difficulty in correctly recording any transaction.

This system of double entry bookkeeping, which has been the recognized form throughout the commercial world for half a millennium, is to be counted among the greatest aids to commerce. Perhaps Goethe may be justified in declaring it " One of the fairest inventions of the human mind." Nevertheless exaggerated claims are sometimes made in behalf of double entry bookkeeping, especially in comparisons made between double entry and the less systematic form known as single entry bookkeeping. Not infrequently is the statement made that double entry bookkeeping possesses the advantage of showing at any time, not only the amounts of money due on current accounts but also the status of the business, what its profits and losses have been. This is clearly an exaggeration so far

as concerns the ordinary practice of the art. The system does attempt to show the status of the business, but breaks down at one point; where a mixed account such as an ordinary merchandise account is kept. As purchasers are debited in this account at cost, while sales are credited at selling prices, it necessarily follows that the balance shown by the account at any time represents the value of the merchandise still on hand, less the profit on goods sold or plus the loss on goods sold. To the extent that such accounts appear the system is not self-sufficient, and the essential needed is supplied by a process somewhat outside of the bookkeeping itself—that is, the inspection of merchandise and the making of an inventory. Or, granting that the inventory is part of the double entry system, it still remains true that the books do not at any given moment show the status of the business. When that is desired the labor of making a new inventory must be performed.

Nor is it true that any set of books ever devised shows with perfect accuracy the state of the business even with the addition of a merchandise inventory. Inventories, at best, are approximate, and it will be shown later there are points of principle in the taking of inventories on which the best authorities are still in dispute. Nor is it possible always to determine the exact nature of a business transaction so as to secure its correct entry in the books of account. A railroad, for instance, replaces an old wooden bridge, costing when constructed five years before $500, with a new steel structure costing $2,500. It is evident that the $2,500 expended is in part an expense (that is, a charge to some Proprietorship account), and in part an exchange transaction (that is, an exchange of the asset " cash " for another asset, " steel girders "). But there is absolutely no way of determining the exact apportionment of charges between these diametrically different accounts. Each railroad may, it is true, adopt a rule of thumb which it follows

faithfully, and which, at times is dignified with the title of " Principle of Accounting." But all confess it is still an approximation, and the fact that in railroad accounting, where the system is most elaborated of any business enterprise, the directors, from time to time, make correcting entries of enormous sums, implies that either before or after the correction the accounts were in essence incorrect, and that the system in reality broke down.[1]

Furthermore double entry bookkeeping, as practiced does not even attempt to show the actual condition of the business, in that to a large extent it ignores contingent liabilities. Even where the law prescribes a statement of such liabilities, as is the case in British companies, it is to be noticed that the statement of contingent liabilities is merely appended to the Balance sheet, and not at all a part of it[2]—that is, they are no part of the bookkeeping system of the company. Occasionally certain contingent liabilities are booked, as for instance " Bills Rediscounted " in the statements of the National Banks of the United States, but in no complicated system of accounts is there any effort to bring into the books all the contingent liabilities and thus to present a full picture of the real status of the business. Double entry bookkeeping thus being not self-sufficient as a system, dealing with approximations rather than certainties, and presenting only a partial view of the facts it attempts to record, does not deserve the eulogium of Van de Linde who declares " Bookkeeping is a science perfect in itself." Much more correct is the mod-

[1] An example of such a procedure is found in the reports of the C. & N. W. R. Co. which in the fiscal year 1898–9 deducted an even $5,000,000 from the cost of the road charging the same to the income account. While such conservative action is highly praised by financial critics, it must be admitted either that it is a direct violation of bookkeeping principles, or that, even in one of the best managed roads, the accounting system broke down and had to be patched.

[2] See model form given on page 66.

erate statement of Rehm that the "principle of truthfulness in accounting is only relative and limited."

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CHAPTER III

THE BALANCE SHEET

A LEDGER kept according to the principles of double entry bookkeeping will at any time show various accounts in each of which may appear sundry Debit and Credit items. A list of the totals of the items shown in each account gives such a Trial Balance of footings as is shown in column (*b*) below:

FORM 17.

(*a*) Title of Account.	(*b*) Footings.		(*c*) Balances.	
	Dr.	*Cr.*	*Dr.*	*Cr.*
Cash	$9,000	$8,000	$1,000	
Merchandise	22,000	21,000	1,000	
Bills Receivable	15,000	3,000	12,000	
Bills Payable	2,000	7,000		$5,000
Rent	150		150	
General Expenses	1,500	100	1,400	
Commissions	10	110		100
Proprietor's Account	550	11,000		10,450
	$50,210	$50,210	$15,550	$15,550

The characteristic feature here is that the total Debits of necessity equal the total Credits. Such a balance of footings is chiefly valuable as furnishing strong, though not conclusive evidence that entries have been correctly posted. As an exhibit of the status of the concern it is made more lucid if, instead of the total footings, only the excesses of one side over the other are listed, thus forming a Trial Balance of Balances, as column (*c*) is somewhat loosely termed. In this, too, the total Debits necessarily

equal the total Credits as the smaller of each pair of items has been subtracted from each column, and the sum of $34,660 being thus taken from equals leaves equal remainders.

Such a Balance must exist at any time in books which are free from errors. But as books are kept, though they must at any time thus balance, the statement which is made by the Trial Balance would ordinarily be incorrect in matter and incomplete in form. Incorrect in matter because of the presence of mixed accounts, such as the merchandise account, which give the excess of Credits over Debits but do not indicate the value of merchandise on hand, nor exhibit the profit on goods sold. Assuming in the case given that an inventory shows the merchandise to be worth $4,000 there is an error of $3,000 which must be adjusted both in the Merchandise and in some Proprietorship account, normally by crediting Profit and Loss. There may also be further inaccuracies because other accounts show only the amount of expenses paid or profits received and not the total incurred or accrued. Thus the amount of interest or rent appearing in the books does not, except by chance, indicate the charges actually incurred during the period covered by the accounts, but merely the amount which has been paid, which may be either greater or less than the amount properly chargeable to Profit and Loss. In the case given it may be assumed that the rent item of $150 was for six months; but that at the time of balancing three months more have elapsed on which rent is accrued but not yet paid, so that there is altogether $225 rent chargeable against the profits of the period. This simple illustration is, of course, capable of the widest extension, for in a large concern the unadjusted accounts are frequently of decided importance.

The Trial Balance is incomplete in form because it shows several items indicating profit or loss, and these have

not been combined into a single account, so as to present the facts in a way easily to be understood. A Trial Balance fails to concentrate the various temporary, subsidiary accounts which indicate changes in Proprietorship. This must be done by closing these accounts into the Profit and Loss Account which then shows:

FORM 18.

Dr.	*Profit and Loss.*		*Cr.*
General Expenses	$1,400	On Merchandise Sales	$3,000
Rent	225	Commissions	100
Balance	1,475		
	$3,100		$3,100
		Balance	$1,475

If the changes here indicated are made in the ledger there then results a true Balance Sheet which may be presented in the following form:

FORM 19.

Dr.	*Balance Sheet.*		*Cr.*
Cash	$1,000	Bills Payable	$5,000
Merchandise	4,000	Rent Due	75
Bills Receivable	12,000	Proprietor's Account	11,925
	$17,000		$17,000

The Balance Sheet then differs from a mere Trial Balance in that correct figures have been introduced through the inventory and the subsidiary, temporary accounts have all been gathered together and combined with the more permanent Proprietorship account. In the instance given here all is combined in one Proprietor's account, as is customary in the accounts of private traders. Where a corporation is concerned the net profits are not added to

the Capital account, but may be stated in a single credit to Profit and Loss, or perhaps by credits to Surplus, Reserve, etc., as shown in later chapters.

The gathering together of all the changes in net wealth and their condensation into one account presumably takes place in the ledger itself as well as in the statement known as the Balance Sheet. It is done by transferring the balance formerly standing to the debit of Expense to Profit and Loss;—that is, by Debiting the latter and Crediting the former account. Similarly with the other accounts concerned, and finally the balance showing in Profit and Loss is itself transferred by an identical process to the Proprietor's account. When this is done a trial balance taken from the ledger corresponds exactly with the Balance Sheet given above. There are no longer any balances standing to temporary accounts; there are no longer any incorrect balances due to the inclusion of mixed accounts. But this condition is but momentary and as soon as transactions are again recorded the Trial Balance no longer presents a statement at once correct and condensed. But it is, of course, possible to prepare a Balance Sheet from the data obtained from the ledger, supplemented with an inventory or other estimate of values, without making the changes in the ledger accounts.

The condensation and combination shown in the Balance Sheet given above applied only to Proprietorship accounts. A somewhat similar grouping of the accounts representing Goods, both positive and negative, may be performed for the purpose of making the showing of the Balance Sheet more perspicacious. Thus the ledger may contain a number of different accounts of individuals who are debtors. It were foolish to list these individually in the Balance Sheet and so they may be subsumed under the title Accounts Receivable, although in the ledger each debtor has a separate account. Or a bank, while carefully distin-

guishing in its own books between the amounts deposited with each of its several correspondents, in its Balance Sheet may not only combine these but may write them with the actual cash on hand under the single title " Cash on hand and on deposit." The Balance Sheet then not only shows a statement condensed to correspond to the ledger after that has been altered by the changes periodically introduced, but may go further in the process of condensation combining accounts which are kept separate in the ledger.

To sum up: A ledger as kept from day to day shows both Debits and Credits in both permanent and temporary accounts, and contains incorrect amounts in the mixed accounts, and unadjusted accounts such as " Interest Payable." A trial balance of these footings, or of the balances would indicate whether the book as a whole balanced, but would give a poor survey of the condition of the concern. To make a clearer exhibit there should be a consolidation of accounts, a correction of the mixed accounts by the introduction of the inventory, an adjustment of accruing expenses and income, a closing of the subsidiary accounts into the general Profit and Loss account. A list of the ledger balances after this has been done would be a Balance Sheet. But in the approved form still greater simplicity may be secured by grouping together similar items and the cancellation of certain positive and negative items even where these processes are not performed in the ledger.

In the preceding chapter was sketched the development of a scheme of accounts from an ideally simple, but unserviceable set of three accounts, to one which by the division and subdivision of different classes, and the separation of the Debit and Credit sides of a single account into independent accounts, secures a mass of detail necessary to the thorough understanding of the business operations. The formation of the Balance Sheet is the reverse

process. From a mass of details in which the forest is hidden by the trees, there is prepared by synthesis and simplification a statement in which the main facts are presented succinctly and intelligibly. The process of differentiation and integration has no fixed limit. It is carried on so long as it proves economically justifiable. The reverse process involved in the preparation of a Balance Sheet, similarly has no absolute limit. For its daily routine, a bank, for instance, needs to have accounts showing the amount due to each individual; for other purposes it may desire to show separately its " Savings deposits," its " Time Certificates," its " Checking Accounts," etc., for still others a single item " Amount due Depositors " suffices. The purpose for which the Balance Sheet is prepared determines the extent to which condensation is to be carried and the form in which it is to be presented.

The advantages of the Balance Sheet being obvious, it seems strange that its use was so long delayed. In the earliest treatises the taking of even a trial balance of footings was not suggested as a means of verifying the correctness of postings. That was done by carefully checking each Debit entry with its corresponding Credit and when everything checked off the ledger was assumed to be correct. Nor were the ledgers balanced at regular or frequent intervals. Of early account books still extant one was not balanced at all in nine years, another not until the end of twenty-seven years. Early trading being largely of the nature of separate ventures, the sending of a caravan to one place or a ship to another, profits were reckoned separately on each completed venture. But those still uncompleted, the ships not yet come in, were left out of account. Hence it was not necessary to balance the ledger as a whole, and the practice recommended by Paciolo of balancing only when a new book was opened seems to have been generally followed by trading companies. The Brit-

ish East India Company prepared a general balance in 1665, but not again until 1685. The French *ordonnance* of 1673, however, required an inventory and Balance Sheet each two years and in a treatise by Schurtz in 1695 a quarterly balancing of the ledger is inculcated.

In recent times the preparation of an annual Balance Sheet is nearly universal. It is required by law in England, France, Germany, and other countries of all corporations. And while in the United States there are few legal requirements in regard to the form of accounts, yet certain classes of corporations which are regulated by law, such as banks, insurance companies, and public utility companies, frequently are required to submit statements including Balance Sheets to state or federal officials. The Interstate Commerce Commission, under authority of the amended law of 1906, is at present formulating a Balance Sheet to which all railroads under their supervision must conform. A copy of a tentative form is given on page 59. The Massachusetts business corporation law of 1903 also provides a form of Balance Sheet to be annually prepared by all corporations within the State.

A Balance Sheet being a summary of the ledger must contain two groups of figures, showing respectively Debit and Credit balances. Usually these two groups are arranged in parallel columns, similar to the conventional arrangement of a ledger account. Indeed in earlier days, and even to-day in continental countries, the Balance Sheet is in fact a ledger account, all of the accounts being actually closed out and their balances transferred to a " Balance Account " which, of course, itself balances. When this is done the ledger is actually closed, no outstanding balances any longer appearing to the Debit or Credit of any account. English and American bookkeepers long ago tired of the useless work of actually closing the accounts in the ledger, necessitating as it does the immediate re-

entering of the items in new accounts. The Balance Sheet is now prepared as an outside abstract of the ledger rather than as an actual ledger account.

Some confusion is, however, caused by divergence in practice in regard to the relative position of the column containing " Asset " items and " Capital and Liabilities " items respectively. The general custom throughout the world is to place the asset items in the left hand column. But in England the reverse is customary, and asset items appear in the right hand column. Much discussion has taken place on this point. The chief argument against the English custom is that it is at variance with the practice of the rest of the world, even Scottish accountants not following the English model, and it seems also to be at variance with common sense, that a summary of the ledger should reverse the accounts from the position which they hold in the ledger itself. On the other hand it is urged in support of the English practice that the Balance Sheet is not in itself a summary of the ledger but an account submitted by the company or by the directors to the stockholders, for which purpose it is, of course, actually prepared. As such it is logical to charge the directors with the capital and other funds furnished to the company and to take credit for the assets on hand, which at the time of the report are constructively tendered to the stockholders in satisfaction of the account.

The extended debate on the subject seems largely a logomachy, and doubtless no one ever was misled by the divergence in practice. Uniformity is however desirable, and even among British accountants there is much opposition to this national idiosyncrasy. " The custom seems to have arisen," says Lisle, " through the influence of the forms given in Acts of Parliament, chiefly the Companies Act, 1862, which must have been prepared by those unacquainted with the theory of accounts. The Profit and Loss

Account is taken from the Ledger, and the sides are not transposed, and there is no logical reason why the sides in the Balance Sheet should be reversed when the items in it are supposed to be the balances remaining in the Ledger, after certain balances have been taken to the Profit and Loss Account. . . . It is certainly most desirable that the form of Balance Sheet with the assets on the left side which is founded on correct principles, should become universal, conforming to the best traditions and the accepted practice of the rest of the world."

Technically expressed the difference is that the British Balance Sheet is the opening balance account, while the rest of the world uses the " closing balance " account. As shown above, in the formal method of balancing, all accounts are closed into a balance account on the debit side of which appear the debit balances of the various ledger accounts. But in this system the accounts must immediately be reopened, which is also done by means of a Balance Account, the " Opening Balance." The new asset accounts, " Cash," " Merchandise," etc., being debited with the outstanding balances, a corresponding credit is made in the Balance Account, which evidently is identical, save that the sides are reversed, with the " Closing Balance " account. But it is difficult to find any logical preference for the account showing the opening of the new year over that showing the momentarily antecedent closing of the old year.

Still further divergence exists in regard to the title to be given the two sides of the balance sheet. That containing the assets is frequently headed " Assets " or " Resources." The other side has perhaps most frequently been entitled " Liabilities." To this much criticism has been made on the ground that the Capital or Proprietorship accounts, which in many cases are the most important are, strictly speaking, not liabilities of the company, still

less of the individual proprietor. To avoid this difficulty the title " Capital and Liabilities " is often used.

Other accountants prefer to head the two sides Debit and Credit, as an ordinary ledger account or account current is headed. But the application of the terms Debit and Credit offers an additional difficulty where the English form of Balance Sheet is adopted. It is a well-nigh inviolate convention—(but only a convention and not, as claimed by many writers, a principle)—of double entry bookkeeping, that the left hand column is called " debit." But another sacred convention is that assets are " debits." When he finds the assets in the right hand column the accountant is indeed perplexed. Shall the right hand column be called Credit because of its position or Debit because of its content? Practice, for here as elsewhere in accounting there is no absolute authority, varies. Thus the headings and position of the two columns of this most important accounting form, show, in good usage, the following variations:

Assets	Liabilities
Resources	Liabilities
Liabilities	Resources
Liabilities	Assets
Debit (Assets)	Credit (Liabilities)
Debit (Liabilities)	Credit (Assets)
Credit (Liabilities)	Debit (Assets)
Active	Passive.

It thus appears that there is not merely divergent usage as to the position of the asset items, but that these assets are sometimes called Debits and sometimes, as for instance in the Balance Sheet of the Bank of France, Credits, and sometimes the first column not only contains the liabilities but is labeled Credit.

The headings " Active " and " Passive " deserve fur-

ther mention. They are given to the two sides of the Balance Sheet by practically all the world except the English speaking peoples. Reason as well as custom gives preference to them over the other simple descriptive titles, for the one side of the Balance Sheet sometimes contains items which are not assets or resources while the other side always contains items which are not liabilities, and frequently includes those that are neither liabilities nor capital. Debit and Credit too are undesirable as being technical but not significant. English and American accountants have nevertheless been loath to adopt this better nomenclature. It is recommended by Sprague in his valuable treatise " The Accountancy of Investment," but it is practically unknown in balance sheets published in the United States.

A slight variation in the forms given above consists in using the phrase " Capital and Liabilities " in place of the single word Liabilities to designate one side of the Balance Sheet. By many accountants this is considered an important improvement. It certainly has the advantage of more completely describing the contents of the column, and removes the confusion which arises from treating the proprietors' capital as though it were legally a liability.

As the Balance Sheet is designed to give an intelligent synopsis of the business it is evidently advantageous not only to consolidate ledger accounts of an identical nature into a single collective account, as the sums due from various customers are subsumed under the title " Accounts Receivable " but also to group the various items, which while differing enough to be kept separate, have certain similar characteristics. Thus while Accounts Payable and Bills Payable are separately shown it adds to clearness to have them appear near each other in the Balance Sheet.

Subheads are frequently introduced into Balance

Sheets to make more clear the grouping of items. The particular terms thus used vary according to the taste of the accountant and the nature of the corporation. In a grouping coming into considerable use the headings are: Capital Assets, Current Assets, and Deferred Assets, with a similar division of liabilities. By Capital Assets is here meant the permanent plant of the corporation, presumably purchased with the proceeds of the Capital Liabilities—that is, the stock and bonds. Current Assets are cash, realizable securities and accounts, or merchandise or material to be currently consumed. On the other hand Current Liabilities are those that are not permanent or funded. Deferred assets generally represent expenses paid in advance. Their inclusion among assets is discussed in Chapter V. This classification is used for instance by the Chicago and Alton Railway.

The grouping of similar items leads to the marshaling of the entire list in some systematic order. This is especially the case in regard to the assets, where the system generally used is based on the degree of ease with which they may be converted into cash; or, in other words, the assets are ranked according to their liquidity. At one end of the scale is cash in which liquidity is perfect, on the other end those assets which cannot be realized at all while the business continues its existence, as perhaps the roadbed of a railroad or the good will of a factory. But disagreements appear as to whether the proper order is from liquid assets to fixed, or from fixed to liquid. Stated concretely the question is whether the list of assets should begin or end with cash.

The argument in favor of showing Cash first among the assets is perhaps a little forced, for it rests on the false assumption that cash is in all cases the most important item. It is true that in some institutions, for instance a commercial bank, cash on hand is the most significant of

the assets, showing the ability of the bank to meet a sudden run. It may even be true that cash is generally more important than any other item of similar amount, but it seems a gross perversion to say that in a railroad the relatively small amount of cash is more important than the great fixed plant. Even an insurance company must surely attach more importance to its many millions of investments than to its cash, for unlike a bank the demands made upon an insurance company are such as to give time for realization of assets. Foreign accounting practice seems to recognize the varying importance of cash in different classes of institutions. Thus in Austria and Germany the Balance Sheets of banks very generally give cash as the first of the assets while in those of industrial corporations cash appears farther down the list. In the United States and England, on the contrary, it is very unusual to find cash listed first either by banks or other corporations.

Strict consistency compels a marshaling of the liabilities similar to that of the assets. Convenience of inspection certainly demands that similar assets and liabilities appear opposite each other. Cash is naturally compared with the liabilities on which immediate payment may be demanded. Yet strangely some accountants who place cash at the beginning of the assets do not change the conventional order of the items on the other side but head the list with the permanent item Capital. This results in the juxtaposition of Cash and Capital Stock, items which in a growing concern have the least possible connection with each other. One may, perhaps, not insist on cash coming first. Even in a bank statement, one is habituated to look at the last item as the most significant of the assets. But certainly strong objection is to be made to having a different order of arrangement on the two sides of the balance sheet. Occasionally consistency in this respect is

found in Balance Sheets. That of the American District Telegraph Company of New Jersey may be mentioned, in which the assets run from Cash to Plant, and the liabilities begin with Bills Payable and end with Capital and Surplus.

Another variation in the form of the balance sheet is that prescribed for the so-called parliamentary companies of England, and known as the Double-Account Balance Sheet. An example is as follows:

FORM 20.

Capital Account.

Dr.		*Cr.*	
Cost of property	£195,000	Share capital	£100,000
Balance	5,000	Debentures	100,000
	£200,000		£200,000

General Balance Sheet.

Liabilities		*Assets*	
Capital account, balance..	£5,000	Materials, etc	£4,000
Bills payable	10,000	Cash	6,000
Profit and loss	3,000	Accounts receivable	8,000
	£18,000		£18,000

It is to be noticed that the Balance Sheet proper does not contain the entire outstanding capital but merely the portion of the capital receipts, including receipts from funded debts, which have not been expended in acquiring the company's plant. Nor does the Balance Sheet itself include the plant in the asset column. Information on these points is gained from the accompanying capital account, the balance of which is brought down as a liability in the General Balance Sheet.

The origin of this peculiar arrangement is that the law

governing such companies provides that the money received on capital account,—that is, from subscription to shares or from sales of debentures, etc.—may be used solely for investment in the plant of the company, and the Double Account Balance Sheet is designed to show how far this requirement has been fulfilled. This form is rarely used in American practice but it has practically been adopted in the reports of the Atchison, Topeka and Santa Fé Railway, as shown on page 60.

The Balance Sheet of the company given above, if presented in the ordinary English form, would be:

FORM 21.

Balance Sheet.

Capital and Liabilities		*Assets*	
Share capital	£100,000	Cost of property	£195,000
Debentures	100,000	Materials, etc	4,000
Bills payable	10,000	Accounts receivable	8,000
Profit and loss	3,000	Cash	6,000
	£213,000		£213,000

In discussing the subject of the shrinkage in value of plant in reference to profits it will be shown that the double account form of Balance Sheet has had a considerable and perhaps baleful influence on the legal interpretation of accounts. It has indeed been argued that the placing of the capital in a separate account involves the principle that changes therein cannot affect the Profit and Loss account appearing in the Balance Sheet. While the validity of this inference may be questioned it is true that the isolation of " capital assets " and " capital liabilities " in the capital account has a tendency to cause them to be considered as isolated in fact, and has led to some far-reaching conclusions which might otherwise never have been reached.

Another question relating to the form of the Balance Sheet,—namely, whether certain items are better shown as additions on one side or as subtractions on the other side is of considerable practical importance. This can best be considered after a discussion of the nature of the various classes of accounts found on either side of the balance sheet.

On the Debit side are found the following:

1. Assets, of whatever kind and including whatever subdivisions such as capital assets, circulating assets, immaterial assets, etc.

2. Loss—when the business shows a net deficiency.

3. Debit Valuation Accounts.

On the Credit Side:

4. Capital—in the strict sense of the contributions made by stockholders or proprietors.

5. Profits—in the broad sense of the accumulations or accretions to the original capital, which may be divided into various subheads, such as Surplus, Reserve, Undivided Profits, etc.

6. Liabilities in the strict sense of debts due by the business.

7. Credit Valuation Accounts.

Of the above groups, (1) and (6) are easily identified as " Goods " accounts, positive and negative respectively, while (4), (5) and (2) are Proprietorship accounts, the last named negative, the others positive.

These are already familiar, but the remaining groups, (3) and (7) require further description. These accounts may be called Valuation Accounts, adopting the German nomenclature (Bewertungskonten) as there is no well established English term. They may be defined as accounts introduced for the technical purpose of indicating that a sum is to be subtracted from some other account. Algebraically they correspond to a negative item transferred

to the other member of the equation with a transformation of sign. Thus in the equation:

$$4x - 2x = 5y - 4y$$

the terms 2x and 4y are evidently to be subtracted from 4x and 5y respectively. But the equation is still correct if it is presented in the form

$$4x + 4y = 5y + 2x$$

in which 4y and 2x would correspond to a Debit and a Credit Valuation account, respectively. They represent, therefore, not independent values but merely that a sum is to be subtracted from another item purposely overstated on the other side of the equation.

This is quite in consonance with practice already explained. It has been seen that expense is logically a subtraction to be made ultimately from the proprietor's Capital account, or immediately from Profit and Loss. But instead of entering every expense item at once to the debit of Profit and Loss, it is placed temporarily in a special Expense Account. But these negative Proprietorship accounts are ordinarily temporary. Before the preparation of the final Balance Sheet they disappear by being included with other items in the general Profit and Loss account. But so long as a balance stands to the debit of Expense, it indicates that to that extent the showing made in the Profit and Loss or in the Proprietor's account is incorrect, that it is overstated because a necessary subtraction has not yet been made. Valuation accounts are similar in origin and purpose but differ in being more permanent in character.

The simplest and best type of a Valuation account is the Depreciation account. At the beginning of the year a concern buys machinery for $10,000. This is properly debited to the Machinery account, and is listed among the

assets. But during the year the value of the machinery declines because of wear and tear. The machinery instead of being worth $10,000 as shown by the account is worth only $9,000. Correct accounting demands that this change be shown just as much as that a payment of $1,000 out of the cash balance of $10,000 be shown. The simplest and most direct, but not necessarily the best way of showing this decline is to enter the $1,000 depreciation in the Credit side of the Machinery account thus reducing the effective balance to $9,000. But it is also permissible to do here what was done in regard to Expense—that is, to indicate the required deduction not by immediate entry in the minuend account but by establishing an independent account for the subtrahend. In this case instead of showing the account thus:

FORM 22.

Dr.	*Machinery Account.*		*Cr.*
Cost price	$10,000	Depreciation	$1,000
		Balance	9,000
	$10,000		$10,000
Balance brought down	$9,000		

the ledger shows the following two accounts:

FORM 23.

Dr.	*Machinery Account.*	*Cr.*
Cost price	$10,000	

Dr.	*Depreciation Account.*	*Cr.*
	On machinery	$1,000

The resemblance of such accounts to the Expense and other Negative Proprietorship accounts is clear. But while the Expense account disappears from the ledger at the end of the year, when it is closed into Profit and Loss, the Valuation accounts continue beyond the period for closing the ledger. It is not for years, and perhaps never, closed into the account from which it indicates a subtraction. As a balance showing on the ledger it must therefore be considered when the formal Balance Sheet is prepared. Debit Valuation Accounts are similar in their nature, but of course, indicate a subtraction to be made from some item standing on the Liabilities side of the Balance Sheet. An item representing unissued stock or bonds, or showing a discount on the issue of capital stock, will serve as an example of such an account.

The question of form to which reference was made above, concerns the treatment of these Valuation Accounts. The point at issue is whether Valuation Accounts should appear *in the Balance Sheet* as independent items, or whether the subtraction which they are designed to indicate should more clearly be shown. In the illustration already used it is desirable that the ledger should contain the two accounts, instead of having the depreciation of the machinery credited at once to the Machinery Account. But that does not decide the form in which the Balance Sheet is to appear and it remains debatable which of the two forms given below is preferable:

FORM 24.

Dr.	*Balance Sheet.*	*Cr.*
Machinery $10,000		Capital stock $19,000
Other assets 10,000		Depreciation 1,000
$20,000		$20,000

FORM 25.

Dr.	*Balance Sheet.*		*Cr.*	
Machinery			Capital stock	$19,000
Cost price	$10,000			
Less depreciation	1,000	9,000		
Other assets		10,000		
		$19,000		$19,000

While practice is by no means uniform, it is better, where an account is clearly of the nature of a Valuation Account, to allow the subtraction to appear in the Balance Sheet, somewhat in the manner just indicated. This avoids any danger of its being mistaken for some other class of accounts, which might lead to an entire misapprehension of the status of the company. Depreciation and Discount on Capital Stock are cited here as typical Valuation Accounts; there are numerous other accounts, however, which come under the same category.

The purposes of the Balance Sheet are twofold. Primarily it shows the financial status of the concern, giving information as to its solvency, and in a less degree it exhibits profits which have been made. The first purpose is on the face the most evident one. The Balance Sheet shows a cross section of the business, it presents the status at a given moment of time; it is ostensibly a showing of Assets and Liabilities, not of Income and Expenses. Yet the Balance Sheet is not without value as an exhibit of profits. Prepared, as it ordinarily is, at annual intervals it serves, at least by comparison, to show the flow of income during the period, as well as the financial status at the moment of its preparation. Indeed some writers, noticeably Rehm, maintain that the prime function of the Balance Sheet is to show the profits of the year and serve as a basis for the declaration of dividends. It may even be presented in

such form as not only to show the profits of the past year, but also to indicate the proposed distribution of such profits. This may be done perhaps in the method shown in the German Balance Sheet on page 65. A somewhat similar treatment is found in the Balance Sheet of many English companies—as e. g., that of J. & P. Coats, Lim.

For whichever use the Balance Sheet is designed it is evident that it must give, as far as possible, a correct showing of the facts. High standards have been set in this respect by the statutes. Thus the English Companies Act provides that the Balance Sheet shall be " drawn up so as to exhibit a true and correct view of the state of the company's affairs "; and the German Commercial Code prescribes severe penalties for " untruthfulness or unclearness " of the Balance Sheet. Nevertheless accountants generally deny the possibility of strict accuracy in the Balance Sheet. Thus Dicksee says: " A Balance Sheet is not a statement of facts, but rather an expression of opinion," and another writer has said: " Not more than ten per cent of the items in any average Balance Sheet are, or can possibly be facts that are capable of being absolutely tested."

Unclearness and consequent misunderstanding of Balance Sheets may be due to several different causes, the principal ones being: (1) The nature of accounting itself, which being at basis an estimate can never be absolute or free from error. (2) The vagueness of the terminology used and the liability that technical words will be misunderstood, even when used in good faith. (3) The purposeful misrepresentation of the condition of the company on the part of the directors or officers.

1. The uncertainty of all accounting can never be altogether avoided. It appears principally in connection with the valuation of assets. In many cases there is no outside criterion of value and no way of insuring against a wrong

estimate. This subject is discussed in the chapters dealing with assets and their valuation.

2. The vagueness of terminology adds to the difficulty of presenting a lucid statement. Technical terms such as Reserve, Reserve Fund, Treasury Stock, Adjustment Account, and others are used with entirely different meanings by different companies and are given most divergent definitions by the courts and by the various text-book writers. Unfortunately there is at present no accepted authority to whom appeal can be made.

The likelihood of a serious misunderstanding is increased because of the fact that items so widely divergent in character stand together in the columns of the Balance Sheet. On the Debit side items representing losses or expenses may be confused with assets. On the other hand, the Credit column contains such antipodal items as Profits and Depreciation—that is, those showing that there has been an increase in the value of the assets, and those indicating that the value of some of the assets has declined. Exactly the same term may be used to indicate these two categories, for both are frequently covered by what is called Reserve. Much good will be accomplished by the action of the Interstate Commerce Commission in prescribing certain uniformities in railroad accounting. It would be well for the public accountants of the country to take even wider action in securing definite and uniform accounting terminology.

3. Purposeful misrepresentation in the Balance Sheet is secured in part by insidiously taking advantage of the inherent difficulties just referred to, in part by more palpable untruth. Of the latter little need be said. Evidently if a company deliberately states it has $100,000 cash on hand when it really has only $10,000 no knowledge of the principles of accounting will disclose the facts. More insidious are the less open misrepresentations. Sometimes a

purposeful grouping together of certain items will conceal the real condition. Thus a company owning $100 government bonds and $100,000 bonds of some wildcat company lists them under the heading "Government and other Bonds." Or it lists bonds and stocks together as "Bonds and Other Investments."

More flagrant is the case where liabilities have been subtracted from the assets, as for instance where the Balance Sheet does not show both Bills Receivable and Bills Payable, but merely the excess of the former over the latter; or again shows only the equity in Real Estate instead of both the cost price and the purchase-money mortgage given in part payment. Even the improper division of an account may be resorted to in order to hide the fact that a company is too largely involved in a single line of investment. A striking example of this came up in connection with the disastrous failure of the Leipziger Bank, which divided up among various different accounts the advances which it had made to an industrial company, hoping thereby to conceal the extent to which the bank was involved in that ruinous enterprise.

Against the positive misstatements in the Balance Sheets the outsider is of course defenseless. But assuming that amounts are correctly given and that there is no gross overstatement, he still needs to be on guard against a misunderstanding: He should be sure that the ambiguous titles are rightly understood, and that he does not confuse accounts of opposite nature. A most important aid in this matter is the careful indication of Valuation Accounts in the manner suggested. Further examination of the Balance Sheet and of the other statements which should accompany it is then possible. The difficult points, in theory and practice, relate to substance rather than to form and are discussed in the various chapters following.

Reference has here been made to incorrectness in the

Balance Sheet as being an admitted fault, or even a fraud. Attention should be called to the fact that many accountants and jurists draw a marked line between the incorrectness of statement which places the company in a more favorable light and one which understates its financial strength or minimizes its profits. To some the former is fraudulent, the latter almost a virtue. It suffices here to call attention to this point, which is discussed at some length in connection with the subject of Secret Reserves.

To illustrate the variations in form found in accounting practice, there are given below a number of Balance Sheets of different corporations. Descriptive notes on the forms given are to be found on pages 67–68.

FORM 26.

Balance Sheet Suggested by the Interstate Commerce Commission.

TENTATIVE BALANCE SHEET.

Previous year.	Assets.	Current year.		Previous year.	Liabilities.	Current year.	
	Capitalized:				Capital:		
	Cost of road				Common stock		
	Cost of equipment				Preferred stock		
	Cost of other property				——— stock		
	Cost of securities				Funded debt		
	Total capitalized assets				Miscellaneous unfunded		
	Additions through income:				Capital liabilities of leasehold properties		
	Roadway						
	Equipment						
	Other property						
	Securities						
	Total additions through income						
	Leasehold properties						
	Total capital assets				Total capital liabilities		
	Deferred and miscellaneous:				Deferred and miscellaneous:		
	Current or working:				Current or working:		
	Profit and loss				Profit and loss		
	Grand total				Grand total		

FORM 27.

THE ATCHISON, TOPEKA & SANTA

GENERAL BALANCE

Balances June 30, 1901.		ASSETS.		Balances June 30, 1902.
$412,361,783.19		RAILROADS, FRANCHISES, AND OTHER PROPERTY, including Stocks, Bonds, etc. (Exhibit A).....		$418,982,696.40
		EXPENDITURES FOR CONSTRUCTION AND EQUIPMENT DURING CURRENT FISCAL YEAR (Exhibit B)		
	$1,887,595.14	Improvements.....	$2,723,775.51	
	460,611.34	Extensions.....	656,172.99	
	1,028,172.40	Equipment.....	7,226,772.68	
3,376,378.88				10,606,721.18
3,803,278.10		INVESTMENTS IN OTHER CO.'S (Exhibit C).....		10,321,617.75
		NEW YORK SECURITY AND TRUST CO., TRUSTEE:		
189,669.86		Cash and Securities in Special Trust.....		
		Balance carried down.....		*5,073,804.67*
$419,731,110.03				$444,984,840.00
$4,495,870.03		BALANCE FROM CAPITAL ACCOUNT.....		
		SECURITIES ON HAND (Exhibit D):		
	$2,898,496.26	Company's Securities (estimated value).....	$2,895,896.26	
	577,126.51	Other Securities (estimated value).....	357,066.66	
3,475,622.77				$3,252,962.92
2,293,276.35		MATERIAL AND SUPPLIES....		3,403,026.86
32,156.03		PREPAID INSURANCE PREMIUM.....		32,019.98
		UNION TRUST CO. OF NEW YORK, TRUSTEE:		
242,958.00		Cash deposit under Article 5 of Gen'l Mtge.....		252,975.50
		GUARANTY TRUST CO. OF NEW YORK:		
257,447.24		Cash deposit for Fuel Reserve Fund.....		548,032.72
		ACCOUNTS RECEIVABLE:		
	$1,387,659.94	Traffic Balances.....	$1,457,105.87	
	380,822.09	Agents and Conductors....	372,429.30	
	503,125.97	U. S. Government.....	409,899.80	
	3,270,427.68	Miscellaneous.....	4,524,173.36	
5,542,035.68				6,763,608.33
5,739.54		PRIOR ACCOUNTS IN LIQUIDATION.....		1,276.06
		CASH:		
9,484,200.69		On Hand and in Bank.....		20,544,405.62
$25,829,306.33				$34,798,307.99

FE RAILWAY COMPANY—SYSTEM.

SHEET, JUNE 30, 1902.

Balances June 30, 1901.		LIABILITIES.		Balances June 30, 1902.
		CAPITAL STOCK:		
$102,000,000.00		COMMON		$102,000,000.00
		PREFERRED	$131,486,000.00	
		Less amount in Special Trust: For acquisition of Auxiliary Lines. $10,800,000.00		
		For Improvements, Extensions, etc. 6,486,470.00		
			17,286,470.00	
114,199,530.00				114,199,530.00
		FUNDED DEBT:		
	$138,727,500.00	General Mtge 4% Bonds	138,728,500.00	
	51,728,000.00	Adjustment Mtge. Bonds	51,728,000.00	
		Serial Deben. 4% Bonds	30,000,000.00	
	1,500,000.00	Chicago & St. Louis Ry. 1st Mtge. 6% Bonds	1,500,000.00	
	250,000.00	Equipment Tr. 5% Bonds.		
		The San Francisco & San Joaquin Valley Ry. Co. 1st Mtge. 5% Bonds	6,000,000.00	
	6,000,000.00			
	830,210.00	Miscellaneous Bonds	828,810.00	
199,035,710.00				228,785,310.00
4,495,870.03		*Balance carried down*		
$419 731,110.03				$444,984,840.00
		BALANCE FROM CAPITAL ACCOUNT		*$5,073,804.67*
$1,239,309.18		SPECIAL BETTERMENT FUND.		367,079.52
582,747.39		ROLLING STOCK REPLACEMENT FUND		211,687.57
321,860.83		RAIL RENEWAL FUND		366,781.16
59,412.56		TIE RENEWAL FUND		
		FUEL RESERVE FUND:		
	$239,386.58	The Atchison, Topeka & Santa Fe Ry. Co.	$489,834.90	
	18,060.66	Cherokee & Pittsburg C. & M. Co.	58,197.82	
257,447.24				548,032.72
844,290.70		ACCRUED TAXES NOT YET DUE		953,103.64
		INTEREST ON FUNDED DEBT:		
	$3,115,305.00	Accrued, not due	$3,512,275.00	
	193,630.00	Coupons, not presented	201,160.00	
3,308,935.00				3,713,435.00
		ACCOUNTS PAYABLE:		
	$1 807,310.16	Pay Rolls	$1,954,254.70	
	2,428,257.98	Audited Vouchers	3,637,781.11	
	1,488,466.99	Traffic Balances	1,452,391.22	
	139,911.83	Miscellaneous	272,162.34	
5,863,946.96				7,316,589.37
268,616.06		PRIOR ACCOUNTS IN LIQUIDATION		220,379.11
13,082,740.41		PROFIT AND LOSS: Surplus		16,027,415.23
$25,829,306.33				$34,798,307.99

FORM 28.

Balance Sheet of an English Bank.

30th June, 1908

Liabilities. *Dr.*	£	s	d	*Assets.* *Cr.*	£	s	d
To Current Accounts and Deposits....	27,281,015	1	8	By Cash in hand and at Bank of England	3,926,404	10	8
To Circular Notes, Credits on Agents, Provision for Bad and Doubtful Debts, Rebate on Bills Discounted not yet due, Commission Loans and other Accounts.....	851,569	0	6	By Money at Call and Short Notice ..	7,767,275	0	0
To Acceptances.....	878,105	8	3	By Government Securities, viz.:— £4,000,000 2½% Consols at 85 (of which £1,000,000 is lodged for London County Council), £500,000 Local Loans Stock at 97.....	3,885,000	0	0
To Liability by Endorsement (Bills negotiated for Customers).....	2,476	13	9	By Colonial Government Securities, British Corporation Stocks, and other Investments.....	475,415	12	5
To Capital, divided into 140,000 Shares of £100, on each of which £20 is paid, making a total of.....	2,800,000	0	0	By Bills Discounted, Loans, and other Accounts.....	15,816,118	13	0
To Rest or Surplus Fund.....	1,400,000	0	0	By Liability of Customers for Acceptances, as per contra.....	878,105	8	3
To Government Securities Depreciation Account.....	100,000	0	0	By Liability of Customers for Endorsement, as per contra.....	2,476	13	9
To Balance of undivided Profit, 31st December, 1907..... £47,211 5 1				By Bank Premises (at Cost less amounts written off).....	794,032	10	9
To Net Profit of the last Half-year..... 184,450 19 7							
	231,662	4	8				
	£33,544,828	8	10		£33,544,828	8	10

CONDENSED GENERAL BALA

ASSETS

PROPERTY ACCOUNT			
PROPERTIES OWNED AND OPERATED BY THE SEVERAL COMPANIES			
Balance of this account as of December 31, 1906		$1,378,185,605.07	
Additions during 1907 to foregoing balance (see page 28)		614,722.63	
Tennessee Coal, Iron & R. R. Co.'s Properties, viz.			
Cost of Fixed Property as acquired at November 1, 1907.	$48,961,208.83		
Expended for Construction in November and December	984,886.74		
		49,946,095.57	
Expended for Additional Property and Construction in 1907 other than by or for account T. C., I. & R. R. Co.		65,996,565.72	
		$1,494,742,988.99	
Less, Charged off to the following accounts, viz.:			
To Bond Sinking Funds	$572,500.00		
To Depreciation, Extinguishment and Replacement Funds	4,680,421.03		
To Funds provided from Surplus Net Income for payment of capital expenditures (see page 12)	53,049,799.46		
		59,302,720.49	
		$1,435,540,068.50	
Expenditures for Stripping and Development at Mines, and Investment in Structural Erection and Logging Plants, viz.:			
Balance at December 31, 1906	$5,722,340.61		
Net Increase during the year 1907	4,575,041.26		
		10,297,381.87	
			$1,445,837,450.37
DEFERRED CHARGES TO OPERATIONS			
Payments for Advanced Mining Royalties, Exploration expenses and Miscellaneous charges, chargeable to future operations of the properties		$6,204,733.85	
Less: Fund reserved from Surplus to cover possible failure to realize Advanced Mining Royalties		2,500,000.00	
			3,704,733.85
INVESTMENTS			
Outside Real Estate and Other Property			1,717,119.87
SINKING AND RESERVE FUND ASSETS			
Cash resources held by Trustees account of Bond Sinking Funds		$444,200.88	
($31,550,000 par value of Redeemed Bonds held by Trustees, not treated as an asset.)			
Contingent Fund and Miscellaneous Assets		1,215,522.85	
Insurance Fund Assets (at market value)		4,120,158.63	
Depreciation and Extinguishment Fund Assets (at market value)		10,741,977.19	
Investments (at market value) for Special Construction Fund for Gary Plant		15,920,542.14	
			32,442,401.69
CURRENT ASSETS			
Inventories*		$136,188,874.28	
Accounts Receivable		58,398,454.36	
Bills Receivable, Customers' and Guaranteed Loans		10,193,706.91	
Agents' Balances		835,269.33	
Sundry Marketable Bonds and Stocks		8,831,154.32	
Loans on Collateral		6,000,000.00	
Cash, viz.:			
In hand and on deposit with Banks, Bankers and Trust Companies subject to cheque	$51,222,395.07		
Deposits loaned on call	2,741,453.81		
		53,963,848.88	
			274,411,206.08
			$1,758,113,013.86

* Inventory valuations include profits accrued to subsidiary companies on materials and products sold to other subsidiary companies and undisposed of by the latter—see contra specific surplus account for these profits. The total of all inventories is, however, below the actual current market prices.

We have audited the above Balance Sheet, and certify that in our opinion it is properly drawn up so as to show the true financial position of the United States Steel Corporation and Subsidiary Companies on December 31, 1907

PRICE, WATERHOUSE & CO.,
Auditors

NEW YORK, March 7, 1908.

FORM 29.

BALANCE SHEET, DECEMBER 31, 1907.

LIABILITIES

CAPITAL STOCK OF U. S. STEEL CORPORATION			
Common		$508,302,500.00	
Preferred		360,281,100.00	
			$868,583,600.00
CAPITAL STOCKS OF SUBSIDIARY COMPANIES NOT HELD BY U. S. STEEL CORPORATION (*Par Value*)			761,810.00
BONDED AND DEBENTURE DEBT			
United States Steel Corporation 50 Year 5% Bonds	$303,057,000.00		
United States Steel Corporation 10-60 Year 5% Bonds	200,000,000.00		
	$503,057,000.00		
Less, Redeemed and held by Trustees of Sinking Funds	23,758,000.00		
Balance outstanding		$480,199,000.00	
Subsidiary Cos.' Bds. (Guaranteed by U. S. Steel Corp'n)	$48,036,000.00		
Subsidiary Cos.' Bds. (Not guaranteed by U. S. Steel Corp'n)	79,716,904.13		
	$127,752,904.13		
Less, Redeemed and held by Trustees of Sinking Funds	7,801,000.00		
Balance outstanding		119,951,904.13	
Debenture Scrip, Illinois Steel Company		34,366.66	
			600,185,270.79
CAPITAL OBLIGATIONS AUTHORIZED OR CREATED FOR CAPITAL EXPENDITURES MADE (HELD IN THE TREASURY SUBJECT TO SALE, BUT NOT INCLUDED IN ASSETS—See page 15).			
Subsidiary Companies' Bonds, not included in this Balance Sheet as either a Liability or an Asset		$10,222,000.00	— — —
MORTGAGES AND PURCHASE MONEY OBLIGATIONS OF SUBSIDIARY COMPANIES			
Mortgages		$2,135,240.38	
Purchase Money Obligations		3,258,700.65	
			5,393,941.03
CURRENT LIABILITIES			
Current Accounts Payable and Pay Rolls		$22,506,488.45	
Bills Payable (of Tenn. Coal, Iron & R. R. Co.)		1,052,747.59	
Special Deposits or Loans due employes and others		1,057,405.58	
Accrued Taxes not yet due		3,736,747.80	
Accrued Interest and Unpresented Coupons		7,863,913.57	
Preferred Stock Dividend No. 27, Payable February 29, 1908		6,304,919.25	
Common Stock Dividend No. 17, Payable March 30, 1908		2,541,512.50	
			45,063,824.74
Total Capital and Current Liabilities			$1,519,968,446.56
SINKING AND RESERVE FUNDS			
Sinking, Depreciation and Replacement Funds, per table on page 10		$41,360,655.19	
General Construction Fund for authorized appropriations (see page 12)		3,023,814.96	
Special Construction Fund for account Gary, Ind., Plant (see page 12)		26,051,242.62	
Contingent and Miscellaneous Operating Funds		7,091,275.89	
Insurance Funds		4,648,358.57	
			82,975,347.23
BOND SINKING FUNDS WITH ACCRETIONS Represented by Cash (and by redeemed bonds not treated as assets—See Contra).			31,508,976.45
UNDIVIDED SURPLUS OF U. S. STEEL CORPORATION AND SUBSIDIARY COMPANIES			
Capital Surplus provided in organization		$25,000,000.00	
Balance of Surplus accumulated by all companies from April 1, 1901, to December 31, 1907, per table on page 34		69,736,490.77	
Total Surplus exclusive of Subsidiary Companies' Inter-Company Profits in Inventories		$94,736,490.77	
Undivided Surplus of Subsidiary Companies, representing Profits accrued on sale of materials and products to other subsidiary companies and on hand in latter's Inventories		27,908,752.85	
			122,645,243.62
			$1,758,118,013.86

FORM 30.

Detailed Balance Sheet of a National Bank.

Resources.		*Liabilities.*	
Loans and discounts	$20,722,771.09	Capital stock paid in	$300,000.00
Overdrafts	92.78	Surplus fund	6,000,000.00
U. S. bonds to secure circulation	50,000.00	Undivided profits, less current expenses and taxes paid	1,000,432.18
U. S. bonds to secure deposits		National bank-notes outstanding	
U. S. bonds on hand		State bank-notes outstanding	10,860.00
Premiums on U. S. bonds		Due to other national banks	5,613,174.42
Stocks, securities, etc	2,382,401.16	Due to State banks and bankers	1,541,449.56
Banking house, furniture, and fixtures	250,000.00	Due to trust companies and savings banks	942,453.63
Other real estate and mortgages owned	24,219.85	Due to approved reserve agents	
Due from other national banks	2,384,091.68	Dividends unpaid	1,125.00
Due from State banks and bankers	377,480.45	Individual deposits	21,076,808.78
Due from approved reserve agents		Certified checks	436,147.52
Internal revenue stamps		United States deposits	
Checks and other cash items	261,492.89	Deposits of U. S. disbursing officers	
Exchanges for clearing house	2,823,723.02	Notes and bills rediscounted	
Bills of other national banks	5,500.00	Bills payable	
Fractional currency, nickels, cents	15,920.00	Liabilities other than those above stated	
Specie	4,372,319.00		
Legal-tender notes	2,516,247.00		
U. S. certificates of deposit	700,000.00		
Redemption fund with Treasurer U. S.			
Due from Treasurer U. S.	36,192.17		
Total	$36,922,451.09	Total	$36,922,451.09

FORM 31.

Condensed Balance Sheet of a National Bank.

Resources.		*Liabilities.*	
Loans and discounts	$20,722,771.09	Capital stock	$300,000.00
United States bonds	50,000.00	Surplus fund	6,000,000.00
Other bonds and stocks	2,382,401.16	Undivided profits	1,000,432.18
Banking house and real estate	274,219.85	State bank-notes outstanding	10,860.00
Due from banks	2,767,072.13	Deposits	29,611,066.13
Exchanges for clearing-house, etc.	3,121,408.08		
Cash on hand, viz.:			
Specie $5,088,239.00			
Legal tender notes 2,516,247.00			
	7,604,486.00		
	$36,922,358.31		$36,922,358.31

FORM 32.

Balance Sheet of a German Manufacturing Corporation.

Active.			*Passive.*			
		M.				M.
1. Real Estate:	M.		13. Capital stock			900,000.
Amount Jan. 1, 1901....	299,227.61		14. Mortgages			174,047.23
1% Depreciation	2,992.28		15. Accounts Payable			39,967.83
	296,235.33		16. Sundry Creditors			123,694.98
Additions 1901.....	957.44	297,192.77	17. Delkredere Account			4,000.
2. Machinery and Equipment:			18. Reserve Account			50,958.16
Amount Jan. 1, 1901....	118,648.61		19. Profit and Loss:	M.		
10% Depreciation.....	11,864.86		Balance from 1900	17,119.33		
	106,783.75		Profits 1901 M. 100,612.08			
Additions 1901.....	3,534.82	110,318.57	Depreciation. 14,857.13	85,754.95		102,874.28
3. Tools, etc.....		1.	Disposition of Net Profits:			
4. Patents, Copyrights, and Models....		1.	5% to Reserve Fund.....	4,287.75		
5. Manufactured Goods		450,872.26	9% Dividend.....	81,000.		
6. Raw materials		228,773.23	5% Tantieme to Directors	2,273.36		
7. Accounts Receivable.....		225,751.14	Balance to New Account.	15,313.17		
8. Sundry Debtors		39,169.75				
9. Bills of Exchange		12,814.13				
10. Cash.....		30,648.63				
		1,395,542.48				1,395,542.48

FORM 33 — *Balance Sheet Prescribed in Table A, Companies Act, 1862.*

BALANCE SHEET OF THE CO., MADE UP TO 18——

Dr. *Cr.*

CAPITAL AND LIABILITIES		£. s. d.	PROPERTY AND ASSETS.		£ s. d
I. CAPITAL.	Showing: 1. The number of shares. 2. The amount paid per share. 3. If any arrears of calls, the nature of the arrear, and the names of the defaulters. 4. The particulars of any forfeited shares.		III. PROPERTY held by the company.	Showing: 7. Immovable property, distinguishing: (*a*) freehold land; (*b*) freehold buildings; (*c*) leasehold buildings. 8. Movable property, distinguishing: (*d*) stock in trade; (*e*) plant. The cost to be stated with deductions for deterioration in value as charged to the reserve fund or profit and loss.	
II. DEBTS AND LIABILITIES of the company	Showing: 5. The amount of loans on mortgages or debenture bonds. 6. The amount of debts owing by the company, distinguishing— (*a*) Debts for which acceptances have been given; (*b*) debts to tradesmen for supplies of stock in trade or other articles; (*c*) debts for law expenses; (*d*) debts for interest on debentures or other loans; (*e*) unclaimed dividends; (*f*) debts not enumerated above.		IV. DEBTS owing to the company.	Showing: 9. Debts considered good for which the company hold bills or other securities. 10. Debts considered good for which the company hold no security. 11. Debts considered doubtful and bad. Any debt due from a director or other officer of the company to be separately stated.	
VI. RESERVE FUND.	Showing: The amount set aside from profits to meet contingencies.		V. CASH AND INVESTMENTS.	Showing: 12. The nature of investment and rate of interest. 13. The amount of cash, where lodged, and if bearing interest.	
VII. PROFIT AND LOSS.	Showing: The disposable balance for payment of dividend, etc.				
CONTINGENT LIABILITIES.	Claims against the company not acknowledged as debts. Moneys for which the company is contingently liable.				

Notes on the Forms of Balance Sheets

Form 26.—This form observes the conventional arrangement of assets, beginning with the fixed and ending with liquid assets. An innovation is however to be noted in the attempt to distinguish between the assets bought with the proceeds of stocks and bonds, and those acquired through investment of income. This to some extent corresponds with the Double Account form used in England. The peculiar treatment of Leasehold properties is also to be noted.

Form 27.—This Balance Sheet is in the Double Account form, although the two portions are not separately headed as is customary in the statements of Parliamentary companies. Attention is also called to introduction of the figures of the preceding year's Balance Sheet for the sake of comparison.

Form 28.—This Balance Sheet of the London and Westminster Bank not only arranges the assets with the most liquid form coming first, but logically observes a similar arrangement of the liabilities. Other features of interest are: The treatment of unpaid capital, the showing of liabilities for endorsement, etc., and the divergent methods used in showing Depreciation of Government Securities and the amount written off of Bank Premises.

Form 29.—This Balance Sheet has many points of interest among which are: The consolidation in one statement of the assets and liabilities of the subsidiary companies as well as those of the Steel Corporation, the treatment of Depreciation, the differentiation of the various Reserves and of their corresponding assets, and the treatment of the Bond Sinking Fund.

Forms 30–31.—These two Balance Sheets represent the condition of the Chemical National Bank of New York.

The first is in the form furnished the Comptroller of the Currency and by him published in the annual report. The second, is a condensed form used as an advertisement appearing in the Commercial and Financial Chronicle. The difference in the figures is due to leaving the overdrafts out of the condensed form and showing only the net sum due depositors. Strictly this is incorrect. It involves the cancelation of assets against liabilities, which is opposed to the general principle that both must be shown in full. The small amount involved however furnishes sufficient justification for the omission.

FORM 32.—This form (taken from Rehm's, "*Die Bilanzen*") is a typical German Balance Sheet. Points of special interest are: The arrangement of assets from fixed to liquid, the inclusion of unrealizable assets at a nominal value of 1 mark (such items being technically called "memoriter accounts"), and the inclusion of many of the details of the Profit and Loss Account in the Balance Sheet. Item 17 "Delkredere Account" is a term seldom used in English accounting literature although occasionally found. It signifies about the same as "Reserve for Doubtful Debts" or for some similar uncertain asset.

FORM 33.—This form has doubtless had a great effect on English practice as its use was for many years obligatory for all companies which did not specifically adopt other articles. The British custom of placing the assets on the left hand side has been due largely to this legal form. Under the modification of Table A made in 1906 the use of this particular form is, however, no longer prescribed. Other points of interest are: The minute details regarding the issue and payment of shares, the addition of contingent liabilities as a supplement to the Balance Sheet proper, the classification of items in seven heads, and the arrangement of assets with cash last.

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CHAPTER IV

ASSETS AND THE PRINCIPLES OF THEIR VALUATION

In the preceding chapter it was shown that where the ledger is properly closed so as to eliminate expense and other loss items, the left side of the Balance Sheet contains only two classes of items: (1) those indicating assets, and (2) those indicating Valuation Accounts—that is, technical accounts whose object is to indicate a subtraction to be made from items listed on the other side of the Balance Sheet. But this latter class of accounts is always small in number, and in the more approved Balance Sheet the Valuation Accounts, too, are eliminated from the left side by being listed in an interior column of the right side, the exterior column showing the remainder after deducting the indicated amount. The left column of the Balance Sheet containing, then, in most cases, nothing but asset items, and in any event having few accounts other than these, that column has generally been called by its characteristic feature, and is labeled " Assets " or " Resources."

But while negative items, whether representing actual losses, or mere technical Valuation Accounts, appear infrequently in a properly prepared Balance Sheet, the importance of distinguishing all such items from asset items proper cannot be overemphasized. A failure to do so causes most of the misrepresentations or misunderstandings of corporation accounts. Thus, with a given sum, say $50,000 worth of unquestioned assets, there may appear in the Balance Sheet another item of $10,000 of indeterminate

character. If it proves to represent Goods the concern then is possessed of $60,000 gross assets with which to secure its creditors and indemnify its stockholders. But if the $10,000 item is merely a Valuation Account, or one representing a loss, it is a serious error to add it to the real assets, for the false estimate of this additional property may mislead the creditor or investor. Frequently Loss items are thus carried in the Balance Sheet with some colorless or misleading title, and a gross misconception of the actual status of the concern is the result. Thus a manufacturing concern engaged in making harvesters, carried in its Balance Sheet the following items: Moving account, Fair machines account, Material and labor expended on self-binder, Bindery account. In each of these instances the court decided that the item represented an expense and not an asset, and the confusion in this case amounted to a positive fraud on the creditors of the company. To one interpreting a Balance Sheet, or to one charged with the duty of preparing it, the first duty is to distinguish properly between assets and the negative items which appear in the ledger, and which if not correctly treated will appear on the debit side of the Balance Sheet, in the goodly company of the assets. The better rule is to eliminate such altogether from the asset side of the Balance Sheet, but where for some reason this is not done, it is indispensable that they be so labeled and distinguished that there may be no uncertainty as to their real nature.

The difficulty in making proper discrimination is greater because the ledger itself, of which the Balance Sheet is an abstract and epitome, does not immediately serve as a guide. The original transaction was a payment of cash for services rendered or material supplied. Cash being diminished, the cash account was properly credited and some other special account, " Bindery account " in the instance cited, was debited. But exactly the same

booking might legitimately be made whether the payment was a loss transaction, or an exchange; whether the amount standing to the debit of " Bindery " represents an expense or an asset. Nor can the proper determination be based on the crude fact of whether or not there was an actual purchase of material. For convenience in accounting it is customary to treat some purchases, such as stationery, fuel, oil, or material or equipment needed for replacements as an immediate expense; and on the other hand certain payments such as wages, and interest, for which nothing tangible is received in exchange, are at times legitimately treated as representing the cost price of some tangible or intangible asset. Whether a given payment is an expense (Loss or " Negative Proprietorship " transaction) or whether it is the means of securing an equivalent asset (Exchange transaction) is a fundamental problem, but one sometimes difficult of determination. In either case it first appears upon the books as a Debit entry in some account, and may, therefore, ultimately be found among the items which appear on the Debit side of the Balance Sheet. Confusion may result either from purposeful deception, or from the misunderstanding of ambiguous or doubtful titles.

The difficulty of distinguishing between these two classes of transactions has been made prominent in railway accounting. To use the technical terms, it is an ever-recurring problem whether a given expenditure is a Revenue Expenditure or a Capital Expenditure, whether it goes into Operating Expenses or into Construction Account. If regarded as a Revenue Expenditure it works as a charge against earnings and so reduces the net profits. If a Capital Expenditure, the Construction Account, that is, the account representing the cost of the road, is debited and the equivalent of the money expended is therefore carried among the assets in the Balance Sheet.

than three theories exist as to the proper divi-
penditures between capital expenditures and
inst revenue.

most commonly accepted is that in so far as
ion results in an addition of substantial and
character which increases the value of the plant
se should be made to the construction account.
1 *v.* Flint & Pere Marquette Ry. 34. Fed. Rep.
s it is clearly expressed in Hubbard *v.* Weare:
id out should not be reckoned as an asset. If
roperty that is on hand, the property is an
xpended in a way that has enhanced the value
ral assets it is included in its valuation. If so
s to have brought no property, and no enhance-
it on hand then it is a loss, and should not be
an asset." (79 Ia. 678.)

more extreme view is that expressed, for in-
T. F. Woodlock: "An addition which does not
venue or diminish expenditure is not a proper
rge according to the best modern practice in
That which simply tends to *hold* business and not to *increase* business is a proper charge against *operating expenses.*"[1]

(3) At the other extreme is the view, presented in the decision by Lord Kyllachy in Cox *v.* Edinburgh and District Tramways Company, Lim. (6 S. L. T. 63, [1898]) that where an improvement is made in the plant, even though it be in the nature of the substitution of new plant for old, the entire cost of the new plant, and not merely the excess in value of the new over the old may be charged to Construction account.

Of these three views the first is not only the most generally accepted but seems to comport best with accounting principles. It has furthermore been authoritatively

[1] *Engineering Magazine*, xi, 241.

adopted for railway accounting by the Interstate Commerce Commission. The second view, while praised for its conservatism seems to imply that there must be a constant rate of normal interest or profits, a condition denied by economic history. If a general decline in profits occurs an improvement which, in a given enterprise, prevents the fall and maintains the old rate of profits is clearly a source of additional value, and would be capitalized in the money market. The third view is rarely justified by accountants, but the principle involved is not dissimilar to that concerned in the question of the loss of capital discussed fully in Chapter XII.

Assuming (*a*) that it has been possible to differentiate all expense items and (*b*) that all expense accounts have been closed into Profit and Loss, and further (*c*) that all mere Valuation Accounts are deducted from the appropriate account, the Balance Sheet, in its best form, contains on the Debit side a list of all the assets belonging to the concern and nothing else. In other words it is a complete inventory, and in its preparation enter all the problems connected with taking an inventory of goods on hand.

The problems of the inventory are three: (1) What items are to be included in it? (2) What expenditures are to be considered as entering into their cost price? (3) In subsequent revaluations are the assets to be continued at the original valuation or are their values to be estimated on some new basis?

These three problems are not entirely distinct. They may all be implied in the last one, that of the current revaluation of assets; for it evidently matters not whether an object, say a worn-out machine, be excluded from the list of assets or be valued at zero; it matters not what was the original value of an asset if at each new inventory it must be independently revalued. But in practical ac-

counting the questions are likely to arise somewhat in the form and order given above.

1. What items are to be included in the inventory?

The underlying principle is that all valuable goods are to be included. Goods is here used in the proper most inclusive sense of all desirable things and does not in any sense imply a discrediting of immaterial or intangible property. Whether the property be material, consisting of land, or permanent plant, or of merchandise; whether it be less tangible credits such as securities, customers' notes, or merely non-negotiable book-accounts; or whether it be that most elusive form of property, Goodwill;—in any event, all goods are alike to be included in the inventory.

While Goodwill and the allied immaterial goods such as patent rights, and trade names are forms of property to which legal rights adhere, it may even be correct to include among assets items representing the cost of some good to one who has no real property right therein. For instance, the money paid by a railroad company to improve a street giving access to its station, or the contribution which it has made to the cost of a tunnel are cited as items which may legitimately be reckoned among the assets of a company although it has acquired no legal property.

2. What is the cost price?

At the time of acquiring a new asset it is normally listed at its cost, even though the purchaser thinks he has bought it at a great bargain. But oftentimes it is not easy to determine just which expenditures entered into the cost of the particular asset. This may well be illustrated by the case of a railroad where its principal asset is the roadway, which in accounting frequently appears under the title Construction Account. The cost of right of way, the purchase price of rails and ties, the labor of engineers, superintendents and laborers are all clearly part of the cost of acquiring the road, and are to be charged to

the Construction Account. But a more debatab arises concerning payments not made in the direct purchase of property or payment for labor but which may perhaps be construed a price of acquiring the property. In this class are known as Organization Expenses. For inst poration is started with $100,000 capital, all o paid in cash. In the process of organizing the c expenses must be incurred for stationery and pr engraving certificates of stock, for fees paid tc and to attorneys. These may amount, say, to this sum merely an expense, or does it represe the cost? If an expense, the corporation is in t of having encroached on its capital, for with a ca of $100,000 it has no assets whatever except ca that it has only $97,500.

Interest charges are normally an unquestione but even interest may at times be construed as penditure. Thus a railroad borrows money wit construct the road, an undertaking which will r eral years. During the period of constructic must be paid while no revenue is accruing. It is not unreasonable to say that the asset which the company is acquiring is a finished road ready for operation. To secure such a plant there must be paid not merely the cost of material and equipment, the salary of engineers and the wages of laborers, but equally essential is the payment of interest to the bondholder. Without this latter pay ment the finished road could not be acquired. To include it among the costs of construction is, therefore, not illogical, and the custom of so doing is gaining increasing legal sanction. In an early American case (Gratz *v.* Redd. 4. B. Mon. (Ky.) 178) the court held that interest on bonds is not to be charged to construction, but the present practice permits the interest paid during the period of construction

to be added to the cost of the road. In England the similar early opposition on the part of the courts has been removed by the Companies Act of 1907 which virtually makes, not merely interest on bonds, but even dividends on capital paid in lieu of interest during construction, a part of the construction costs. And in Germany, where the statutory regulation of accounting practice is generally much more specific than in either England or America, both interest and dividends thus paid are chargeable to "Construction Account." Some have argued that the discount on bonds sold should also be charged to the cost of the road. But so far as the bonds run longer than the period of construction, the justification of such a practice rests on an illogical distinction between discount paid in advance, and current interest installments. As is shown in the Chapter on Liabilities, discount on bonds is prepaid interest for the entire life of the loan, and it is only interest during construction, not for the later period that can legitimately be construed as part of the cost of construction. The Interstate Commerce Commission has ruled that discount on securities is not properly included in the cost of property.

A similar problem arises in connection with the expenses incurred in making experiments in search of new inventions, now a recognized part of many industrial plants. This may be treated as a part of general expense but there is colorable argument on the other side. An improvement might be secured by purchasing a patent right from an outside inventor. The alternative plan is to hire the inventor to work for the company, in which case the salary and other expenses incurred seem to be the cost of the secured invention just as truly as the price paid for the patent right. If this is so, may not expenses be counted as part of the prospective cost even though the goal has not been quite reached?

From the foregoing it is seen that it is by no means easy to lay down a rule by which to determine whether certain charges are to be treated as expense or whether they are to be held in the Balance Sheet as representing the cost of assets. From a purely theoretical view point it seems that any expenses necessarily involved in organizing a going concern are properly assets of that concern, as much as are the real estate, the machinery, or the stock in trade. To the stockholder or proprietor it is part of the investment from which profit is to come and is hence capital expenditure. Being necessary to the establishment of such a concern rivals cannot spring up, unless they too provide capital for such a payment, and actuarially figured a concern fully established is worth to new operators a premium equal to the cost of organization. Furthermore, as was most clearly brought out by Justice North in Abstainers and General Insurance Company ([1891], 2 Ch. 125) any other treatment of such payments would have the absurd result, already alluded to, of making necessary an initial inroad into capital except where a company started with a nominal surplus.

The effect is similar whether the payment of organization and other similar expenses is charged directly to the Construction Account or is carried along as an independent item. The significant fact is that both in theory and practice the sums so paid are held to represent assets. Whether it is better to show them in increased cost of plant or as an independent item is debatable. German legislation allows only the former, the idea being that it is dangerous to allow the appearance of "fictitious" accounts among the assets. It also attempts to discriminate between the preliminary costs of construction which are to be charged to the plant, and the costs of organizing the corporation itself, which are not to be counted as an asset at all. In order to provide for these latter it is customary

in Germany to issue the original capital at a premium sufficient to cover the preliminary expenses. But in America the preferred practice seems rather to favor listing Organization expenses and similar items as a separate item, for attention is thus called to their somewhat intangible character. This custom also furthers the conservative practice of annually charging off a considerable portion of such items, so that in a few years they disappear from the inventory altogether. But the Interstate Commerce Commission provides in its rules for classification of expenditures for road and equipment that organization expenses shall be charged to the construction or equipment account.

In the problems thus far discussed the question has been whether a payment of a definite sum should be considered the cost of an equivalent asset, or merely the payment of an expense. Another problem arises in connection with the purchase of property with stock or bonds instead of with cash. Here the difficulty turns not on whether an asset has been acquired, but on the uncertain value of that which has been given in exchange therefor. In actual practice it is all too customary to treat the cost of such property as being equal to the par of the stock issued therefor. Even accountants of the highest standing justify such a procedure. Evidently this is but one aspect of the much-debated question of stock watering. To assume that the value of the property acquired equals the face of the stock issued is to assume that stock never is, and never can be issued in excess; that there can be no stock watering. It argues in a vicious circle, for it makes the value of the property dependent upon the amount of stock issued, while capital is to the accountant properly an expression of the value of the net assets owned,—a sum representing the net wealth of the proprietary interests. If carried to the logical extreme, this principle would require that where stock is sold at a discount the cash re-

ceived should be treated as equal to the full face value of the stock, though it is in fact only a fraction of that sum.

It is true that there are difficulties in determining the real value of the property purchased with stock, and statutes and courts have doubtless been wise in refusing to interfere with valuations placed on property; but because the courts cannot detect the error is no excuse for a willful misstatement of the value of the property acquired. The Connecticut law of 1903, while recognizing that the valuation of the property is a function of the directors and not of the courts, sets a high standard in requiring that where stock is issued for anything except cash the " directors shall make and sign upon the record book of the corporation a statement showing particularly of what the property received in payment for stock subscriptions consists, and that it has an actual value equal to the amount for which it is received." The judgment of the directors is properly made final, but they are liable for fraud in overvaluation. Less complete is the provision made in other statutes that the accounts of the company shall clearly show that certain property was acquired in exchange for stock but without implying an equivalence in actual value. This subject is discussed more fully in Chapter IX.

3. What is the basis of revaluation?

Having accepted the principle that the original valuation of assets should not exceed the cost price, and having noticed the practical and theoretical difficulty in determining the exact cost price, there remains the more important question as to subsequent revaluations of assets. Shall they be put down at the original acquisition price or at some other valuation? If at some other value, shall it be the current market price, the present value to the concern, or the price they would bring in liquidation? The general principle which, with various applications, is now universally accepted, is: The inventory should be on the

basis of the value of the assets to the present holders as a "going concern." The proper value is that which they have to the holding concern, and not that which they might have to other persons, whether these persons are ordinary customers, or those who might bid in the assets at a liquidation sale. The value is that which they have to the company as then existing and not to a company in the hands of a receiver, or one closing up its accounts and going out of business. It is true that in the case of corporation this represents the interests of the stockholders rather than those of the creditors. Yet it is little exaggeration to say that if all assets were listed at the value which they would realize at forced liquidation, no Balance Sheet would show solvency. Valuation on such a basis would, therefore, be absurd, and the general principle must be adopted that the basis of inventory values is the present value of the asset to the holders as a "going concern." To this rule there may be exceptions or modifications, mostly introduced for the sake of preventing a self-deceiving exaggeration of values.

This leads to another distinction of great importance, that between "fixed" and "circulating" assets. It is impossible to draw a sharp and absolute line between these two classes, but in general the differentiation is easily made. By fixed assets are meant those which are bought for permanent or long-continued use, by circulating assets those whose use is relatively short or which are purchased for resale as merchandise. There is coming to be recognized a difference in the basis of valuation of these two classes of assets, which permits much greater latitude in regard to fixed assets than is allowed concerning circulating assets. In general it is considered legitimate to continue fixed assets at their cost despite a subsequent decline in their value. But in valuing circulating assets regard must be had to current values, although there is some

question as to whether the market value, even of circulating assets can be accepted where that exceeds the original cost.[1] Here again the governing principle is that of the "going concern." A piece of land, for instance, is purchased at a fair price for the purpose of erecting a factory. Its services are presumably perpetual and undiminishing; the value to the company was, in the first instance, represented by its full cost price; its services, and hence its value to the going concern, are the same as before. It is therefore proper to continue in the inventory the cost price of the land quite irrespective of changes in its market value whether that be greater or less than the cost. The market price, evidently, can never be realized so long as the land is still used as a factory site, the abandonment of the factory means ordinarily that the enterprise ceases to be a going concern. To be sure the factory site might conceivably be sold and a less expensive one be bought in its stead, but this implies recognition of a double set of unrealized conditions and is too vague for embodiment in formal accounts. Changes in the market value of an absolutely fixed asset, such as land, railroad bed, or water rights, may be ignored on the principle that such changes do not affect the value of the going concern. This is most clearly seen in the case of land, but it is equally applicable to any form of fixed asset provided, of course, that allowance is made for its necessary maintenance and renewal.

A corollary of the foregoing is that mere fluctuations in value in contradistinctions to permanent change of value, may be ignored. This is theoretically correct, for fluctuations so transitory as to be included within the period during which the company holds the given asset are analogous to changes in the value of a fixed asset. If raw material is bought in July and the finished goods are to be

[1] See Chapter V.

marketed during the following June, the oscillations of price within that period need have no effect on the value of the material in the manufacturer's hands. To take account of a temporary rise or fall in a December inventory in such a case would perhaps be erroneous; certainly so if it were known that the normal price would again appear before the year's end. But in practice the principle is difficult of application, because of the impossibility of determining which changes in price are mere temporary fluctuations and which are more permanent alterations in value. It is, however, of importance in application to the fluctuation in the market price of investments, although here, as is shown in the next chapter, conservative practice justifies a less logical treatment.

Another corollary needs mentioning. If changes in the market value of an unchanging asset need not be reckoned the converse is true. Actual changes in the use value of a fixed asset, a machine for instance, must be reckoned, even though to the eye the machine remains unchanged. In technical terms, while fluctuations in fixed assets may be ignored, depreciation must always be considered. This is true whether there is actual physical deterioration or, as in the case of a patent right or a terminable leasehold, the decline is due to the approach of the time when the present asset will cease to have value. The three rules of appraisal of general application are therefore: (1) The value to be taken in the inventory is not the liquidation value, but that to a going concern; (2) Changes in market value of fixed assets may be ignored; (3) Depreciation must always be taken into account.

In all the foregoing discussion it has been assumed that the purpose of accounting is to present the facts fully and without reservation; but argument is sometimes made that the statement set forth in the Balance Sheet does not even profess to be true; indeed, that a variation from the truth,

provided only that it understates the wealth of the concern, is really a merit rather than a fault. This view has formally been set forth in a recent English case where the court stated that "The purpose of the Balance Sheet is primarily to show that the financial position of the company is at least as good as there stated, not to show that it is not or may not be better."[1]

This view is frequently supported by theoretical writers and has the further sanction which comes from the precedent set by conservative corporations in all lands. Thus it has been argued that an undervaluation improves the economic position of the corporation, that it prevents the danger of fictitious dividends, and that "absolute truth in the Balance Sheet is not only not demanded by law but is in itself undesirable." For precedents may be cited the Bank of England which omits from its statement its land and building, which are certainly worth many millions; the practice common among German companies of listing their real estate and sometimes their other fixed plant at the nominal sum of one mark; and the tendency among American railways to mark down the valuation placed on the road whenever large earnings make that possible.

In so far as the undervaluation of certain assets is merely an attempt to secure a more truthful conspectus of the entire situation, the action may be justified. An argument that however truthful one's intentions may be, he is almost sure to overestimate the value of his own possessions, and therefore after having determined what he really thinks they are worth, his results will be more accurate if he arbitrarily writes off certain sums, is not without force. But to state that an absolute understatement is praiseworthy neglects the fact that fraud may surely be perpetrated in that manner; and while the reaction against overvaluation is but natural and in general healthful, it

[1] Newton *v.* Birmingham Small Arms Co. [1906] 2 Ch. 378.

seems a mistake to overlook the value of accuracy and to cease to hold it up as the goal of accounting. Time was, and that not long since, when even the Supreme Court of the United States stated that there is but little danger that any board of directors will ever understate the value of the assets, thereby also underestimating the profit, the temptation being in the opposite direction.[1] But certain notorious bear operations in the stock exchanges show that the unforeseen has frequently happened, and the undervaluation of assets, with its accompanying understatement of profits and establishment of a secret reserve, if the lesser of two evils, nevertheless falls far short of the ideal standard of accounting.

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CHAPTER V

THE VALUATION OF PARTICULAR ASSETS

In the light of the norms laid down in the preceding chapter the problem of the proper valuation of various kinds of assets may be considered. These may conveniently be grouped into certain classes: Land, Buildings, Machinery, Investments, Mercantile Credits, and Merchandise.

Land

What has been previously said in regard to fixed assets generally, applies preëminently to land where that is held for the uses of the company. The rule here is that land for permanent holding may be held at its cost despite a decline or rise in its market value. Legal authority for this view is given in Bolton *v.* Natal Land and Colonization Co., Lim. ([1892], 2 Ch. 124) where the court held not only that a company need not bring into its accounts the increase or decrease in the value of its lands but that, at least so far as it affects the showing of profits, it is not right so to do.

Occasionally, however, a question may arise as to what is the cost of the land. Difference of opinion arises as to the treatment of legal fees connected with the examination and recording of title. Practice seems to favor adding these to the price paid in determining the cost, but the high authority of Pixley is against such a practice. The arguments previously given regarding organization expenses support the current practice.

Where a purchase mortgage has been given in partial

payment of land it is sometimes the custom to add interest paid on the mortgage to the value of the land; but this is unjustifiable for the interest is not a part of the cost of acquisition nor does it represent any additional value acquired, and even though it were parallel to an accretion in value (an assumption far from true), appreciation of a fixed asset is not to be booked.

Property acquired not for permanent use but for resale is analogous to merchandise bought by a trader. Where the land requires improvement, as where a large tract is purchased to be provided with sewers, streets, gas and water pipes, sidewalks and other improvements, with the expectation of subdividing and selling it in small parcels; it is in almost the same category as raw material bought by a manufacturer to be used in producing his finished commodity. In such cases the principles applying to the valuation of merchandise and of partly finished manufactures respectively are to be applied to the valuation of the land. The expenditures actually incurred in acquiring the land, including those incident to bringing it into the desired form for sale, may properly be considered as entering into the value at any time during the process; but it is incorrect to add any sum representing an estimated appreciation. By some authorities interest actually paid on a purchase mortgage during the improvement period may be added to the value of the land, but interest at a rate which it is estimated would normally have accrued on a similar sum loaned out, may not be added. This makes the treatment of interest payments on land where the land is being worked up into a marketable commodity similar to that of interest paid during construction of a railroad. But the better practice is against such a marking up of the value of land designed for sale. That there is no absolute criterion universally adopted is shown by the fact that in Germany the laws

permit interest paid to be added to the value of
held by a company with limited liability (Gese
b. H.) but does not allow this to be done where
is an ordinary corporation. (Aktiengesellschaf

While the improvement of a large tract
analogous to the manufacture of commodities, t
the various small parcels of land differ widel
makes the estimation of the value of the uns
of a tract of land a little more difficult than th
of the unsold portion of the stock of identical c
A tract may have been purchased and divided i
hundred lots, half of which are sold. The pres
however, not at all that the remaining half rep
half of the original cost. The proper basis is
the value of each separate parcel at the market
to assign to it as the inventory value that pr
the total cost which its appraised value bears
appraisal. Thus if a block of land is bought a
into one hundred lots at a cost including impro
$150,000, the sum of the appraised value of th
dred lots after improvements have been com
be $200,000, the appraised value of lot A bec
superior location, being $4,000; but the value to be as-
signed to A in the inventory (some of the lots having
been sold) is not $1,500, nor $4,000, but $\frac{4{,}000}{200{,}000} \times \$150{,}000$
or $3,000.

Buildings

The principle here is not different from that applicable to land although there are differences in detail. These arise from the difference in the cost of maintenance, and the certainty that in most cases even after liberal renewals the buildings will some time be worn out or antiquated. To continue the original cost it must be certain

that all necessary repairs have been charged to expense. This is more difficult because during a course of years it is likely that additions and improvements, as well as normal repairs, will be made. Where an improvement, say the introduction of an electric lighting plant, or an addition to the building has been made, it is difficult to determine how much of the money thus expended is to be considered as the cost of an additional amount of building and how much is a mere repair or restoration of part of the old building. The ever difficult task of distinguishing between so-called "capital and revenue expenditures" must be accomplished; and, after all that is done, allowance must be made for the inevitable progress toward the time when the building will no longer be serviceable for the purposes of the company.

Machinery, Tools, etc.

Valuation at cost price, with proper allowance for depreciation is evidently the correct basis. But it should be borne in mind that much of the equipment of the factory is of very temporary use, and a valuation near the cost would be far from correct. Such articles as patterns, in a short time may have practically no value. Lasts in a shoe factory are a very large item and accumulate with changes in fashion at an appalling rate. Much care must be exercised if the Balance Sheet is to escape being overloaded with what represents a real cost but is no longer a real asset. Where the machinery used is not purchased but made within the factory itself, as is very often the case, the value is of course not the price which that machinery would bring in the open market but the actual manufacturing cost.

The inventory value of machinery may properly include its cost of installation in the factory. (Whittaker *v.*

Amwell Nat. Bank. 52 N. J. Eq. 400. (1894)). This is in harmony with the general principle that the inventory has to do with the value to the going concern.

Investments

In the foregoing pages there has been only one objective criterion of value, cost price, and that is confessedly faulty for it refers to an earlier and not to the present day valuation. But for investments that are quoted in a stock exchange there is a definite objective determination of to-day's value. The objection to making an independent valuation of one's lands or houses is that there may be an unconscious overvaluation, or that an intentional, and perhaps fraudulent, overvaluation cannot easily be detected. But where there is a definitely ascertainable market price, known to the public and fixed by outside interests, the objections just urged do not apply and it would seem that it might be safe and justifiable to ignore altogether the cost price, and alter the book value with every fluctuation in the market price.

But if the securities are real investments, and not the stock in trade of a banker the objection at once arises that there can be no availing of the market price so long as the securities are thus held. For instance a National Bank buys government bonds at par, the holding of a minimum amount of such bonds being a prerequisite to the bank doing any business. The bonds bought at par may rise to 110 per cent., or conceivably fall below par, but it is evidently impossible for the bank to realize this increase in value, nor can it suffer a loss while it continues as a going concern. To list the bonds at more or less than cost price would, for the ordinary purposes of the bank, be futile. It is true that if the bank went into liquidation the variation would be realized, but to take account of

that possibility is counter to the generally accepted rule that assets are to be inventoried at their value to the going concern.

The bank may furthermore buy other bonds to serve as the basis for additional circulation. These bonds, above the minimum required in any event, may be sold but only where the covered circulation is withdrawn. The impossibility of realizing an appreciation of these additional bonds is less absolute than in the case of the required minimum holding, but here again the principle of the going concern applies. The bank cannot continue the note-issuing function and at the same time realize on the bond premium. So here too the variation in market price seems to be of no import. The same conditions exist in regard to holdings of stock acquired by a railroad to give it control in the management of another road or of some allied enterprise. The market price of this stock may vary, but such changes in value cannot be realized by the purchasing company while it still continues to exercise the function for which it acquired the stock—that is, to control the other road.

In many cases, however, there is no such indissoluble connection between holding some given security and the maintenance of the business. Securities are held not because required by some provision of law, not for the sake of controlling business nor even for the sake of income alone. It is desirable to hold some funds as an available reserve against emergencies and a low-rate marketable security is somewhat less expensive and almost as serviceable a reserve as the bare cash. The sale of such securities at the market price would not at all interfere with the business of the concern; and the appreciation, as shown by the market price, indicates merely that the reserve to-day really contains more than the sum that was originally invested. May not the inventory here rely solely on the

market quotation? Strict consistency would seem to give an affirmative answer. On the other hand the present price is only one point in a fluctuating scale of market prices and there is no ground for assuming that it will be realized. If it has risen there is at least a possibility that it will fall. The emergency that will call for the sale of the securities is likely to be at the time of a monetary stringency and hence of low prices, so that a high valuation would be purely illusory. The attitude of statute law and of the courts on this point is that where the securities are permanent holdings, disregard of market prices is proper whether these prices are above or below cost. This is clearly set forth by the English courts in Verner *v.* The General and Commercial Investment Trust Limited. ([1894] 2 Ch. 239) where the distinction is made between securities held as investments for the sake of the income, and those carried as the stock in trade of a dealer in investments. In France, too, the Bank of France holds all government securities which were bought for permanent holding at cost price irrespective of market quotations. In Germany, however, the law provides that the market price is to be taken except where it is higher than cost price, which is equivalent to saying that of the two prices, cost and quoted market price, the lower is always to be taken as the basis of the inventory. This provision of the Commercial Code leads therefore toward conservatism at the expense of logical consistency. In Austrian law the quoted market price is always to be taken whether higher or lower than the cost. The general practice of conservative American accountants, especially in banks, insurance companies and other fiduciary institutions, is in line with German law, and favors marking down the investments when the market price is below the cost price, but opposes taking recognition, except in an explanatory footnote to the Balance Sheet, of the appreciation due to a rising

market. Thus the New York Banking Department asks banks to charge off the excess of book value over market value of securities, but where the difference is slight or supposed to be a mere temporary fluctuation, no attention is paid to the variation. Occasionally in America both practice and law, as for instance the Maine Savings Bank Law, adopt an even less logical rule that securities may not be listed above par even though they cost a considerable premium, but if costing less than par they are to be listed at cost.

In the justification of listing permanent holdings at cost it has been assumed that the lapse of time has, in itself, worked no change in the serviceability of the security. This is true only in case of permanent securities such as corporation stock in this country, or the perpetual annuities used by most foreign governments. Time differences may be ignored also in certain bonds which while due at a definite time have so long a duration as to be practically perpetual, the bonds of the West Shore Railroad running 475 years being an illustration. But wherever an ordinary bond is bought at a premium it is to be recognized that the purpose of this premium is to make the nominal rate of interest conform to the market rate for the given security, and is a payment in lump sum to offset the receipts from future interest payments whose rate is higher than the market rate. If the current market rate is five per cent., a six per cent. bond running five years will not be worth as much as a bond bearing the same rate of interest but running twenty years. In one instance there is, in addition to the normal rate of five per cent., an annuity of one per cent. running for five years, in the other case the annuity runs twenty years. To continue to list the bond in successive annual inventories at its cost price is incorrect. At the time of purchase an estimate is made of what rate the bond nets the investor, the

three factors of time, rate and price being considered. Thus if 112.46 per cent. is paid for a bond running twenty years and paying annually six per cent. interest it nets the investor five per cent. In each successive inventory the bond should be listed not at 112.46 but at the price at which the bond with its shortened duration would net five per cent., that is, at 112.08, 111.69 and so on until the nineteenth year when its value is 100.95. Or, looking at it in another way, the annuity of one per cent. running for twenty years was estimated to be worth 12.46 per cent. It is clearly faulty to consider a similar annuity running nineteen, and a constantly diminishing number of years, as worth the same price; but it should be estimated on the same basis, that is, at such a price that it continually yields the holder five per cent. interest. The figures for the valuation of bonds of different rates and maturities are easily obtained from tables of Bond-Values, many of which are in the market.

The formula by which these values are obtained is derived as follows:

Letting:

V_n = the present value of a bond running for n interest periods.

I = the amount of interest paid on each \$100 at each interest payment.

i = the rate of interest to be yielded the holder for each interest period.

It is clear that the present value of the bond is made up of a series of values composed of each coupon maturing at successive periods and of the principal, assumed to be \$100, due at the end of the n years. But the first coupon due in one period (for convenience the period will be assumed to be a year) has for its present value $\frac{I}{1+i}$, the

coupon due in two years is worth at present $\frac{I}{(1+i)^2}$ that in three years $\frac{I}{(1+i)^3}$ and so on until the last coupon which is worth $\frac{I}{(1+i)^n}$. Adopting the conventional symbol $v = \frac{1}{1+i}$ then the entire series of coupons is worth at present $I\,(v + v^2 + v^3 + v^4 \ldots + v^n.)$ or $I\,\frac{1-v^n}{i}$. The principal of \$100, also due in n years, is worth $100\ v^n$ so that the equation reads: $V_n = I\,\frac{1-v^n}{i} + 100\,v^n$. This, for the bond used as illustration in the text, would be

$$V_{20} = 6.\,\frac{1-\frac{1}{(1.05)^{20}}}{.05} + \frac{100}{(1.05)^{20}}.$$

In other words the present value of the bond represents two sums: One the present value of an annuity (I) furnished by the series of coupons, running for n years, the other the present value of the principal due in n years.

The same result is gained by considering, in the formula, only the excess of interest (over the market rate) which the bond pays. A bond bearing five per cent. interest would, of course, sell at par when the market rate is also five per cent. A bond paying a higher rate of interest will be worth a premium equal to the present value of an annuity whose annual installment is the difference between the nominal rate of interest and that taken as the basis of calculation.

The formula, derived in a manner similar to that given above, is:

$$P = (I - 100\,i).\ \frac{1-v^n}{i},$$

or, substituting the values used above:

$$P = (6 - 5)\frac{1 - \frac{1}{(1.05)^{20}}}{.05}$$

or the value at five per cent. of a twenty-year terminable annuity of $1.00. Where the nominal rate of interest is less than that taken as the basis the result will, of course, show a discount instead of a premium.

The value of the bond at the time of each successive inventory is obtained by merely changing the value of n so that it equals the number of interest periods still remaining before maturity.

Interest is more customarily paid semiannually. Where that is the case the same formula is used but n represents the number of half-year periods, and i of course, the rate to be obtained not for the year but for the half-year. Thus for a twenty-year six per cent. bond with interest payable semiannually n would be 40, i would be .025 and I would be 3. Tables are published for bonds with annual, semiannual and quarterly interest and also to show the price at which a bond bearing interest annually would be as remunerative as one bearing interest semiannually, etc.

Logically bonds bought at a discount should similarly be treated by being marked up in value with each annual approach toward maturity. If a six per cent. bond is worth 112.46, that is, it nets five per cent., a four per cent. bond would have an actuarial value (its market value would probably vary somewhat from this) of 87.54. That is, the bond bearing a nominal rate one per cent. above the net rate of five per cent. is worth a premium of 12.46 per cent.; one whose nominal rate is one per cent. below the normal should sell at a discount of 12.46 per cent. To continue to list the latter bond at the purchase price is mathematically incorrect, for at maturity the holder will

receive not only the regular payment of interest and his invested principal of 87.54 but an additional sum of 12.46, the full face of the bond being then payable. The value of a promise to pay this sum of 12.46 increases as the date for its payment draws near, and a correct valuation would therefore demand that each year the bond purchased at a discount should be marked up just as the bond purchased at a premium should annually be marked down.

But accounting practice has not fully accepted this principle. In many cases the annual writing off of premium paid is justified, but there is hesitation at writing up the bond bought at a discount. This is largely an evidence of the conservative tendency which looks askance at anything which tends to swell the value of assets, but encourages undervaluation. Moreover the courts in the apportioning of receipts of estates between the one with a life interest and the remainder-man, generally hold that premiums given and received are a part of the corpus of the estate and do not enter into revenue, but that where a bond is bought at a discount the tenant for life receives only the nominal rate of interest; and while the rulings of the courts in probate matters do not necessarily apply to ordinary commercial accounting, the practice in the treatment of premium and discount on bonds is similar in both fields.

Interest accrued on investments should be estimated and shown on the Balance Sheet. This is not analogous to taking recognition of an appreciation in market value, for the interest is earned and is as much an asset as the face of the bond itself. Whether interest accrued but not yet due, or interest due but not yet paid, may be used as a basis of dividends is a question discussed in Chapter XII. But accounting practice uniformly estimates interest, whether due to or by the company, even though the law may object to a dividend in anticipation of its receipt.

Mercantile Credits

The holding of mercantile credits—book accounts, acceptances, promissory notes, etc.—being an essential part of ordinary commercial life they must be treated somewhat differently from investments. They are so clearly a part of the circulating assets (are "circulating capital," to use the term employed by the courts) that there can never be any justification for allowing them to appear at more than their real value. The argument frequently made that shrinkage in the real value of fixed assets, inasmuch as it works no change in the conduct of the business, may be ignored is not without some plausibility. But a loss in any of the circulating assets cannot be disregarded. It immediately manifests itself in reducing profits and must appear in some form in the Balance Sheet.

For convenience Mercantile Credits are entered and carried on the books at their face rather than at their present actual value. Thus a thousand-dollar note due without interest in sixty days appears in the Bills Receivable account at $1,000 not at $990, leaving the adjustment to be made through an interest or discount account. This is much more convenient in checking over the contents of the bill portfolio, and, unless a daily revaluation of the notes is made, it is also as accurate as to list the note at the discounted value on the day when it is acquired. But when a new inventory is to be made it is necessary to take full account of interest adjustments.

The adjustment of interest is, however, a mere matter of arithmetic and offers no problem in accounting. The estimate of probable loss due to insolvency of debtors, being an estimate merely, is a debatable and interesting problem. A company may hold a thousand notes of customers aggregating $100,000, its books showing:

FORM 34.

Dr.	*Balance Sheet.*	*Cr.*
Merchandise	$140,000	Capital $220,000
Bills Receivable	100,000	Profit and Loss 30,000
Cash	10,000	
	$250,000	$250,000

If some of these notes are clearly worthless they should at once be stricken from the list of assets, without waiting even for the annual inventory. No justification can be found for retaining on the books the note of A for one hundred dollars if it is known to be worthless. As soon as that fact is manifest the note must be eliminated by charging it at once to Profit and Loss, or pending the annual balance of the books to some subsidiary account indicating a loss. The accounts would then furnish the following:

FORM 35.

Dr.	*Balance Sheet.*	*Cr.*
Merchandise	$140,000	Capital $220,000
Bills Receivable	99,900	Profit and Loss 29,900
Cash	10,000	
	$249,900	$249,900

Where there remains a slight chance that the debt may some time be paid and yet one on which it is not safe to count, it may be desirable to keep a reminder of the debt on the books without appreciably swelling the assets by including doubtful debts. This is conveniently done by charging off the bulk of the note, but leaving a purely nominal sum, perhaps one dollar, or even a smaller sum, as a reminder that there is still an unsettled claim outstanding.

But a more delicate question arises in connection with

probable losses which have not been made known. Of the remaining 999 notes in the assumed case no one of the makers has as yet failed, and yet past experience shows that it is a certainty that some of the notes will not be paid in full, and the probabilities are that at least one of them will ultimately prove worthless. Each one of the notes must in the meantime be kept on the books at the face value, allowing the estimated shrinkage to appear as a reserve for doubtful debts. The entry to be made is to debit Profit and Loss and credit Reserve for Doubtful Debts or some equivalent account. In the formal publication of the Balance Sheet this would appear as

FORM 36.

Dr.	*Balance Sheet.*		*Cr.*
Merchandise		$140,000	Capital $220,000
Bills Receivable	$99,900		Profit and Loss 29,800
Less Allowance for doubtful debts	100	99,800	
Cash		10,000	
		$249,800	$249,800

That such allowance should be made is not only dictated by business prudence and accounting practice, but is as well commanded by the United States Supreme Court in Providence Rubber Co. *v.* Goodyear (9. Wall. 788), and by the English courts *In re* Oxford Benefit Building & Inv. Soc. (35 Ch. Div. 502). The amount to be allowed is to be decided in each individual case but it certainly should not be much below what has been generally accepted in the specific business concerned. The basis of figuring is also subject to individual preference; some preferring to take a percentage of gross sales, some a percentage of debts outstanding, still others a percentage of credits given.

With business of a constant character correct results could be reached as well with one method as another. But a change in the character of the business done would necessitate a change in the rate adopted. Thus if 2 per cent. on total sales was correct with a business which was 50 per cent. cash it would probably be insufficient if the change in business methods gave 80 per cent. of the sales for credit and only 20 per cent. for cash. Similarly an increase in term of credit granted would invalidate an allowance based on debts outstanding. And any rates would need to be changed if there arose a general panic or other commercial disturbance.

It is incorrect to list in the Balance Sheet merely the excess of debts due to the concern over the amounts due from it. The canceling of one against the other does not exhibit the true condition, for the failure of the concern's debtors to pay does not at all affect the necessity of providing for the claims of its creditors. This, however, is done in the Balance Sheet of the Illinois Central, but the defect is partly remedied by reference to statements giving the detailed information.

Merchandise

General usage prescribes that merchandise on hand shall be inventoried at cost rather than at selling price. Prudence further demands that merchandise which evidently cannot be sold except at a loss, be marked down even below the cost price. If one could count not only on good faith but as well on unbiased judgment in making inventories, the taking of the present market value, instead of the cost price would not be objectionable, but rather to be commended. Indeed, the first principle of valuation laid down above, that of the " going concern " in strict logic demands that merchandise for sale be valued at the pres-

ent selling price, with a reduction to cover selling expenses. A real change having taken place in selling value the original cost is of no effect, for whether bought at a high or low cost its value to the concern is determined at the normal price at which it can now be sold. But the German commercial code, in many respects a guide to those whose accounting practices are so free from legal control, in attempting to prevent overvaluation prescribes that the cost price of merchandise must be taken, except where there is a publicly quoted price—as for instance for grain in a produce exchange—which is lower than the cost price. Logic perhaps demands that the quoted price should be taken as well when over as when below the cost price, but this is not permitted by German law, although the Austrian law allows it to be done.

American practice agrees with German law. In one important decision the Massachusetts court, on the contrary, stated that depreciation or advance in the value of the stock unsold must be taken into account.[1] But in this particular case there had been a loss of merchandise by fire instead of an appreciation in value; and it is to be hoped that this *obiter dictum* is not considered authoritative. In any event the judgment of accountants is adverse to such treatment of the inventory. The conservative rule, generally adopted, is that merchandise is to be inventoried at cost except where there is a decline in value, in which case the lower value is to be used.

In the case of merchandise purchased for sale the cost price ordinarily can be easily obtained. There may, however, be some room for question even here as to what items, if any, may be added to the quoted cost price for inventory purposes. It is apparent that if two consignments be purchased one at $1,000 c. i. f. and the other for $990 f. o. b. the freight and other charges on the second consignment

[1] Meserve *v.* Andrews, 106 Mass. 419. (1871.)

being just $10, it would be illogical to list the two lots at different figures. In other words the familiar principle of valuing the goods to a going concern applies here as well as in other cases. The retailer needs the goods in his own store and the expenses of getting them there, whether paid by the manufacturer and included in the cost price, or paid by the retailer in addition to the cost price are legitimately included in the inventory value.

It is sometimes urged that while cost, rather than selling price, should be selected, it need not be the actual cost price paid, but the price which would need to be paid at the time the inventory is taken. The clearest case is where one consignment is purchased say at $1,000 and shortly after an exactly similar consignment is bought for $1,200. If an inventory is taken while part of the first consignment is still unsold, the taking of the actual costs will present, in the inventory, the absurdity of having identical goods listed as having different values. If all are inventoried on the basis of the later invoice, the profit which thus appears is said not to be an unrealized profit on sales, but an already gained profit on a fortunate purchase.

The danger of such a course is apparent. A large stock of unsold goods can be made to show a profit by a subsequent purchase of a small amount at a high price. Perhaps this is purposely done, and an excessive price is willingly paid just before inventory in order to make a fair showing to stockholders. A stock of 100,000 yards, costing and worth only one dollar the yard, could by a tricky purchase of 100 yards at $1.10 yield an apparent profit of $10,000. Thus the safeguard which is found in clinging to cost price would be nugatory and the way made easy to the pleasing practice of creating profits by marking up goods. To prevent this the actual cost paid should be taken despite the objection stated above.

In cases where parts of the different stocks of similar

goods, bought at varying prices, have been sold, a still further difficulty arises. Thus, to illustrate, 10,000 bushels of grain are bought in January at $1.00 a bushel, 10,000 in July at $1.20, and in August 5,000 are sold at $1.30. If it is assumed that the sale was of the first consignment there has been a realized profit of $1,500, but only one-third as much if the sale was of grain bought in July. Where the consignments are kept physically distinct the proper treatment is apparent; where they are not distinguishable the average cost should be taken, thus showing a profit of $1,000. Evidently the average should be the weighted average, not the simple average of prices, so that a purchase of 10,000 bushels at $1.00 and 2,000 bushels at $1.20 would be treated in the inventory as an average cost price of $1.03⅓ so that a sale of 5,000 bushels at $1.30 would give a realized profit of $1,333.33.

When the merchandise to be inventoried has not been purchased but has been manufactured the determination of cost price is much more difficult and the general question of manufacturing cost will receive further consideration. The principle is clear enough. All the costs which are immediately necessary to secure the goods may be included in the inventory price. But difficulties arise in applying this simple rule, because of the uncertainty whether certain payments such as partners' salaries should be included in cost of goods or treated as part of the general expenses of the business. Attempts have even been made to include a certain percentage, representing normal profits, in the cost price, a procedure which not only opposes accounting practice but which has been prohibited by the courts.[1]

Goods in the process of manufacture for the general market should not be inventoried at more than the cost price; but when they are manufactured on a specific con-

[1] Providence Rubber Co. *v.* Goodyear. 9 Wall. 788.

tract it is correct to take into account the selling price, making due allowance for the unfinished work still to be done, the risks intervening and interest charges involved. Where the contract period extends beyond the current fiscal period such inventorying is not only permissible but is the only correct method. Otherwise the profits on the contract work would all appear in the year when goods are delivered, although the labor involved belonged almost entirely to a preceding year.

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See also the references to Chapters VII and XII.

CHAPTER VI

IMMATERIAL ASSETS

Goodwill

Goodwill, which may be taken as the typical form of Immaterial Assets, represents the value of business connections, the value of the probability that present customers will continue to buy in spite of the allurements of competing dealers.

While the inclusion of intangible assets in the inventory of corporations is not infrequently the object of popular criticism the legitimacy of Goodwill has long been recognized both by the courts and by accountants. A clear statement of the principle is given in the case of Washburn *v.* National Wall Paper Company, where the court said: "When an individual or a firm or a corporation has gone on for an unbroken series of years conducting a particular business, and has been so scrupulous in fulfilling every obligation, so careful in maintaining the standard of the goods dealt in, so absolutely fair and honest in all business dealings that customers of the concern have become convinced that their experience in the future will be as satisfactory as it has been in the past, while such customers' good report of their own experience tends continually to bring new customers to the concern there has been produced an element of value quite as important—in some cases, perhaps, far more important—than the plant or machinery with which the business is carried on. That it is property is abundantly settled by authority, and, indeed, is not disputed. That in some cases it may be very valuable prop-

erty is manifest. The individual who has created it by years of hard work and fair business dealing usually experiences no difficulty in finding men willing to pay him for it if he be willing to sell it to them."[1]

Similarly accountants have recognized that the purchase of Goodwill of an established firm may be a most valuable transaction, for it may save, as Guthrie has neatly put it, " the period of perilous probation." Indeed even the Goodwill of a bankrupt house is at times legitimately sold at a high price, and where so purchased it is as true an asset as factory, machine, or stock of merchandise.

But in valuing Goodwill for the inventory the limitation of its value to its cost must be most rigorously observed. It has been seen that the restriction of inventory value to cost price is of rather general application, but its force is much greater when the Goods to be valued are immaterial. No one would object to the inclusion in the inventory of treasure trove even though it cost the finder nothing. But Goodwill is rigorously excluded unless it has been secured at a cost. Hence it is recognized as legitimate for the purchaser of Goodwill to include it among his assets, but accounting practice prudently, though perhaps illogically, forbids the firm which created the Goodwill to place in the Balance Sheet any value on the *clientèle* which it has built up and which it could at any moment sell for a large sum.

This conservative restriction is doubtless necessary to prevent a harmful exaggeration. Human nature is so incurably optimistic, especially when it comes to estimating one's own possessions. The boy's jackknife, the citizen's fatherland, the man's children, are in normal cases a little better than similar possessions of anyone else. The same phenomenon appears in the valuation of one's business

[1] 81 Federal Rep. 20.

assets, where the natural instinct to overvalue one's own possessions is augmented by the fact that such overvaluation may be the means of overreaching some one else in a business deal. In proportion as it is difficult to verify values it is therefore customary to limit the value at which they are appraised. Cash being of definite value may be listed though it cost nothing; quoted securities or commodities may, according to some authorities, be listed at the market value even though that exceed the cost; but Goodwill, because of its vague nature and the difficulty of verifying its appraisal is to be excluded unless it has been purchased.[1]

But it is not always easy to determine whether there has been an actual purchase of Goodwill, or what price, if any, has been paid. Most frequently where a corporation buys out the business of a partnership or of another corporation the purchase is made with stock, not with cash. When, as is generally the case, the par value of the stock given is in excess of the value of the tangible assets it is at times difficult to determine whether the difference in these values represents Goodwill purchased or a mere discount of the stock issued. In ordinary American practice the accountants have assumed the existence of Goodwill wherever the tangible property purchased is less than the par value of the stock issued therefor. Thus in the recent capitalization of a large catalogue house, whose total assets were less than $20,000,000, there was added at the time of reorganization the item of Goodwill valued at $30,000,000. The exaggeration in this figure is clearly established by the quoted prices of the stock issued for its purchase.

[1] For a possible exception to this see the decision in the English case *In re* Barrow Hæmatite Steel Co. ([1900] 2 Ch. 855) where it was held that a decline in the value of part of the assets should be offset by the introduction of Goodwill before it could be claimed that capital had been impaired.

In general the recent organization of the so-called trusts included a high valuation for Goodwill, ordinarily roughly corresponding to the amount of common stock issued. In most cases this was grossly overstated, and openly and notoriously incorrect. This is shown for instance by the experience of the Asphalt Company whose earnings estimated at ten per cent. of the capitalization proved to be less than one per cent.; or by that of the American Malting Company where the $2,100,000 earnings estimated in the prospectus dwindled to a negative quantity in the first year of operation. It is, therefore, necessary to examine the conditions in which Goodwill exists, and to consider the principles governing its valuation.

The value of Goodwill, or the other similar categories, "Franchise," "Patent Rights," "Trade Marks," "Trade Names," depends on the existence of some legal right or trade custom which will bring to the owner of the business profits in excess of that to be obtained in other ordinary channels of trade. If the firm's name and its past reputation for good dealing will bring to its doors a flow of customers without the expense of profuse advertising or despite the lower prices of less favorably known rivals, there is a source of profits in excess of what could be obtained by establishing a new house. If the right to use a particular location to the exclusion of others, whether that location be of a newspaper stand on a crowded corner, or a street railway with an exclusive franchise to the streets, there is at least a possibility that it opens the doors to the receipt of profits which could not be gained in any line of business not thus specially favored. If any business is protected by a monopoly, whether the legal monopoly of a patent right or a partial business monopoly resting on the combination of all present competitors in a "trust," there is a possibility of maintaining prices at a level which will yield profits in excess of the current

normal rate, and hence a legitimate basis for the valuation of Goodwill.

The one justification of a valuation of Goodwill is the existence of some transferable right which will secure to the purchaser profits in addition to the normal returns in the amount of capital invested in the business. Such a surplus over the normal income to be derived from investment is practically an uncertain annuity and its value depends (1) on the annual amount, (2) on the degree to which it can be transferred, and (3) on the length of time during which it will continue. The determination of the amount of excess profits is generally based on the records of past experience and relies upon the accounts of the firm or corporation selling its Goodwill. How long a period should be taken into survey is a delicate problem. A single year is not a sufficient period, for the high profits of that year may be altogether due to exceptional temporary conditions. Nor should too long a period be considered lest the conditions of the remoter years be so different from those prevailing at the time of valuation as to make an average of little significance. Especially if the business is declining, the inclusion of the operations of the earlier years in the estimate is objectionable, as tending to exaggerate the showing of profits. Yet in recent capitalizations the National Wall Paper Company based the estimate of the valuation of Goodwill on the earnings of only eleven months. The Rubber Goods Manufacturing Company took the earnings of a single year; the National Salt Company averaged the earnings of two years, and the National Cordage Company those of three to five years. In English corporation finance the latter figures seem to be most generally used.

In determining the amount of surplus profits to be capitalized two distinct methods are used. One is to capitalize the entire net profits, of course being sure that the profits

stated are really net profits and that due allowance has been made for depreciation and other charges, and from this capitalization is deduced the value of the tangible assets. This was done by the National Wall Paper Company. Another way is to deduct from the net profits the assumed normal rate of profits on the capital actually invested and then capitalize the remaining surplus earnings. This method is more commonly used in floating English companies. Of course the results will be the same provided the rate at which the earnings are capitalized is the same as the assumed rate to be derived from invested capital.

2. The transferability of the excess income is a point which varies greatly. When a lawyer, physician or other professional man sells his Goodwill it is always a question as to how far the *clientèle* which he has had is a purely personal matter. On the other hand the surplus derived from an exclusive franchise of a street railway is clearly transferable. Between these two limits there is room for variation, depending largely on the degree to which the personal element of the proprietor has been a determining factor in creating the profits. It is not uncommon where Goodwill is bought by a corporation to specify that the former proprietors, managers or officers shall agree to continue their services for a given time after the purchase, as was done, for instance, in the case of the Cordage Trust.

3. The duration of the annual excess depends on two factors: those having to do with competition, and those relating to general trade conditions. Error has been committed in the calculations of many of the large combinations both in this country and in England in assuming the continuance of large profits, where that is conditioned on the absence of competition. A notable instance was in the case of the Columbia Straw Paper Company, where

large profits were perhaps honestly estimated on the basis of the high prices to be obtained by a practical monopoly. But as soon as prices were raised old mills were reopened, new mills were immediately constructed, and, in addition, new competition arose through the introduction of wood-pulp as the basic material of wrapping paper such as was previously manufactured exclusively from straw. As a result the company was insolvent in less than two years.

Almost equal error has arisen from neglecting the possibility of change of general trade conditions. Thus in the consolidation of English factories for making bicycles a large valuation was placed on the Goodwill based on the continuance of previous demand; but almost immediately after the shares of the combination were floated the fad for bicycle riding ceased, and with it the value of the shares so eagerly purchased by the public. Similarly the Goodwill of a distillery, or of a saloon, might cease because of the emergence of a sentiment in favor of abstinence or the enactment of a prohibition law.

With all the variables referred to, it is evidently impossible to lay down a rate at which to capitalize Goodwill. Dicksee gives a rough estimate that to determine the value of the Goodwill of a trading company the average net profits—interest on capital and allowances for proprietors' services having been deducted—should be multiplied from one to five times; the multiplier to be used for a manufacturing concern being from one to four, for a professional practice one to three, for newspapers and "other quasi-monopolies" a much higher figure, ten not being unusual. In determining the value of Goodwill of the trusts already referred to the profits were multiplied by 5 for the Cordage Trust, by 10 for the Salt Trust, by 14¾ for the Rubber Goods Manufacturing Company, and by 16 for the National Wall Paper Company. But in these cases the element of monopoly was perhaps erroneously sup-

posed to exist, and the profits were the total net profits, not those profits less the normal rate of interest on invested capital. Furthermore payment in these cases was made generally in stock worth far less than its par value.

Mr. Charles S. Fairchild gives the following description of the method of estimating the value of Goodwill:

"In some cases the value of the Goodwill acquired has been very carefully estimated. For example, the promoters of one company made a special point of the conservative methods employed in arriving at the value of the Goodwill of the companies which were consolidated. According to their statement, the new company was virtually buying the real estate, plants, stock, etc., on the basis of appraised cash value. In addition an allowance was made for Goodwill, calculated upon this basis; from the net profits of each company deduct 7 per cent. upon the capital actually employed, 1½ per cent. upon sales, which were about three times the capital, 2 per cent. for depreciation on brick buildings, 4 per cent. on frame buildings, and 8 per cent. on machinery. If the average net earnings were in excess of all this, and in this case it appeared from the promoter's statement that they usually were, the excess was capitalized as "Goodwill" on the basis of 20 per cent. per annum—i. e., the value of the Goodwill was estimated to be five times the amount of such earnings in excess of 7 per cent. on capital and allowance for depreciation."[1]

As has been shown by Francis More it is correct to have a different rate for capitalizing different portions of the surplus earnings. Thus, to use the illustration given by him, if it is assumed that 8 per cent. is the normal rate of profits, a concern having assets worth $100,000 and earning $8,000 affords no basis for Goodwill, the earnings

[1] *Publications of the American Economic Association*, 3rd Series, I. p. 156.

showing no excess over the normal rate. If earning $13,000 the excess of $5,000 might be capitalized, say at seven years' purchase making a valuation of $35,000. But if the earnings were $18,000 it would be unwise again to add $35,000, but the additional surplus of $5,000, might perhaps be multiplied by five. And so each additional portion of surplus should be taken at a lower rate of capitalization, or to express the idea more generally, the larger surplus earnings are relatively to normal profits, the lower should the rate of capitalization be. This is reasonable since a small excess is more likely to continue than a large one, affording a smaller field for competition, and probably being less subject to other fluctuations.

What has been said in support of the legitimacy of including Goodwill and similar immaterial assets in the inventory in no way justifies the practice, all too common, of listing a nonexistent or a greatly overvalued Goodwill. Such an item is not merely immaterial but also imaginary. From the view point of accounting, there is no more justification for such a procedure than there is for placing in the list of assets a brick building which has no existence, or for stating in the Balance Sheet the money in bank at twice the sum actually on deposit. As was said by the United States Supreme Court, " Goodwill is a legitimate asset where it is actually existent, but it must not be something unsubstantial and shadowy but capable of pecuniary estimation."[1]

The question has arisen as to whether Goodwill having once been properly entered in the books at its cost price should continue at that figure, or whether it should be subject to periodical revaluation or regularly written off, as machinery is marked down to allow for depreciation. In this, as in other questions of accounting theory, opinions differ. In the discussion which has been carried on among

[1] Camden *v.* Stuart, 144 U. S. 104 (1892).

English accountants, Child, Cooper, Guthrie and Pixley are among those favoring a regular writing off of Goodwill, while Dicksee, Caldicott, Garcke and Fells, and James argue that it may be continued at its original figure regardless of changes in its value. Some set a less absolute rule but differ, and somewhat strangely. Thus Welton in general opposes the writing off of Goodwill, but says that it should be done when the company has not earned the anticipated profits on which the valuation of Goodwill was based. But with Guthrie the writing down of Goodwill is conditioned on the company having unusual profits which can be appropriated for that purpose.

The English courts have decided in Wilmer *v.* McNamara ([1895], 2 Ch. 245) that even where the Goodwill has actually declined in value it is not necessary to charge the shrinkage against profits. The decision was based on the conception that Goodwill is "fixed" capital, and the application of a previous decision[1] that a decline in the value of "Fixed Capital" (or permanent assets) need not be taken into account in determining profits.

From one point of view it is true that Goodwill is the most permanent of assets. Anything else, even the factory site may conceivably be sold without necessarily terminating the business. But Goodwill cannot be disposed of without selling the business itself. Furthermore the very indefiniteness of Goodwill renders its overvaluation less harmful than that of other assets. Every one knows that the price paid for Goodwill gives no indication of its present value, and that at any time a new valuation needs to be taken. Hence there is little danger of deception by continuing it among the assets at the cost price. But this doctrine of the permanence of Goodwill seems inconsistent with the theory of valuing it as the purchase of a temporary, terminating annuity. Strict logic requires, at

[1] See below, p. 208.

least where the price paid for Goodwill is definitely based on a number of years' purchase of excess earnings, that the valuation should be written off in the same number of years. To require the writing off only when the expected returns are not realized appears unnecessarily hard on the stockholders for they are doubly burdened: first, by the decline in expected earnings, and then by a further charge against the diminished earnings to cover decline in Goodwill. To mark down Goodwill when profits are unusually high is clearly illogical, though it is not thereby necessarily discredited in accounting practice, for it reduces the valuation of excess earnings at the very time and in direct ratio to the increase of such earnings. Probably the most satisfactory solution is ordinarily to write off Goodwill in proportion to the number of years figured in its valuation, for in any event it is an uncertain asset, and a depreciation of even fixed assets (in which class it is somewhat forced to include Goodwill), while it legally need not be made, is justified on the plea of conservatism. And where it is clear that the valuation of the Goodwill was erroneous, that it is not worth its book value, the best method of adjustment is that advocated by Dicksee, to offset the decline in its value by a reduction of capital, not by a charge against profits.

In American corporation finance Goodwill frequently is not openly shown on the Balance Sheet. Oftentimes it is included with the tangible property under the title "Property, etc.," or it may be combined with other items of an intangible nature under headings such as "Goodwill, Patents, Leases, Trade Marks, etc." (American Cotton Oil Co.), "Patent Rights and Goodwill" (American Glue Co.), "Franchises, Goodwill, etc." (American Graphophone Co.), "Goodwill and Patents" (Sears Roebuck Co.). While such property rights as patents, trade marks, etc., are quite different in their legal nature

from Goodwill yet economically they are very similar, both representing a transferable right from which exceptional profits may be derived. Those which are distinctly terminable, as patents, copyrights, etc., differ from Goodwill in that the value must some day disappear, and hence the necessity of marking down their value is apparent.

Deferred Assets

Another class of items appearing in the Balance Sheet are called Deferred Assets or Deferred Charges. These terms indicate that payment has been made of expenses properly belonging to a period subsequent to the date of the Balance Sheet. In this class are found such items as "Discount and Commission on Bonds," "Deferred Charges to Operation," "Cost of Stripping Surface of Mines," "Interest paid in advance" and many others.

Attention has been called to the discussion as to whether certain expenditures, especially those made at the beginning of a company's operations, should be considered as mere expenses or as part of the cost of the plant to be charged to Construction account. The items appearing in Deferred Assets hold to some extent an intermediate position, for they are not conceived of as representing part of the cost of permanent assets, nor are they charged at once to the expenses of the year. Being clearly expenses they are yet expenses which are offsets of future earnings, not of past receipts. While in many cases not representing any actual asset, they are correctly treated as though they were assets. This may be clearly illustrated by an item representing "Interest paid in advance." This may be an irrecoverable expense. It may not even be a reduction of the amount of debts, for in many cases a prepayment of a debt does not bring with it a discount for the time before maturity. But to the going concern it is immaterial

whether the interest is paid in advance, or not being paid there is in the treasury cash sufficient to pay the interest when it matures. Thus the item " Interest paid in advance " is practically the same, so far as meeting the interest expenses of the next fiscal period, as an equivalent amount of cash. The former, as well as the latter, may therefore legitimately be treated as an asset. As such accounts represent a prepayment or anticipation of an expense, and provide for the proper adjustment of net profits as between different fiscal periods they are sometimes called Anticipation accounts, or Adjustment accounts. The latter term is, however, used somewhat ambiguously, and, especially in England, signifies what is also known as a Collective account, or, in recent American nomenclature, a Controlling account.

In some cases, as where it represents interest prepaid for a short period, the Deferred Asset must evidently be treated as an expense of the next fiscal period. In other cases the Deferred Asset represents the prepayment of an expense which pertains to the operations of several years, as, for instance, the cost of stripping the surface may cover perhaps twenty years of mining operations. Here evidently it is strictly necessary that the total amount should be charged off within the period to which it applies. In some cases the Deferred Assets really represent payments covering permanent advantages, as where Organization Expenses are included under this general head. Here it is not strictly necessary that the charge should be written off but it may be carried indefinitely, just as it might legitimately have been added to the value of the plant.

But conservative companies are apt to charge these items off more rapidly than strict necessity demands. Thus one company charges off annually one-sixth of the " Discount on Bonds " although the bonds run for twenty years.

In another case one-eighth of a similar discount on bonds was written off in the first year, but in the following year the entire remainder disappeared.

At times there appear among the assets items which represent not anticipated expenses but unusual losses which the corporation does not see fit to charge at once to Profit and Loss, nor to make manifest in a reduction of capital. In such cases the charges which are deferred are not the costs of future earnings, but losses which it is expected future profits will cover. A striking instance of such an item is found in the Balance Sheet of the United Railways Investment Company for December 31, 1906, where there appears "Earthquake, Fire, and Strike, $859,983." Openly to show such an item is a vast improvement over carrying it concealed among the charges to plant and other material assets. Of course, it is in no sense an asset, properly speaking not even a Deferred Asset. But by treating it as shown above the loss does not necessarily interfere with current profits. The legitimacy of so doing is discussed at length in Chapter XII.

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CHAPTER VII

DEPRECIATION

DESTRUCTION is the law of nature. Fixed capital, using the term here in its economic rather than in its accounting sense, despite its name, is not exempt from this law. Even so-called permanent improvements, such as buildings, are all subject to the ravages of time, which Marshall aptly defines as "the complex of destructive agencies." All machinery is on an irresistible march to the junk heap, and its progress, while it may be delayed, cannot be prevented by repairs.

This obvious economic fact is of momentous import to accounting, although full recognition has not been given to it in general practice. It is one phase of the question of the inventory discussed in the preceding chapters. It implies that, in valuing all fixed assets, account must be taken of the lapse of time, and even in the case of machinery giving no evidence either of use or misuse, the bare fact that it is a year nearer its inevitable goal is an item of which technical account must be taken.

In estimating the cost of production there must be considered not merely wages and material, interest and rent, repairs and renewals, but in addition some allowance must be made for the diminished value of the fixed assets due to gradual loss of serviceability. Consequently profits are not determined until after allowance has been made for depreciation. Depreciation is not a disposition of part of the profits, but an expense without which profits can never be learned. The principle is clear. Materials consumed

in manufacturing a commodity, as for instance fuel or oil, are, of course, an element of expense. This is so because an item of wealth disappears and its effect can only be to diminish *pro tanto* the expression indicating the net wealth. Its loss is in other words an expense. In the case of fuel the loss is immediate, and is, therefore, charged at once to expense. Exactly similar is it with the productive instruments whose use extends over a longer period. The article consumed in a single use must be considered an expense of the current production, the temporary structure or the tools lasting only a year are a charge against the production occurring during that year. The more permanent form of assets serving for productive use during a period of years should be spread as an expense during the period of use, whether that be five or fifty years.

If, instead of considering the year as the fiscal unit of time, the entire economic period of production is regarded as the unit, the purchase of a machine, or the purchase of a patent right are both expenses—expenses to the full amount of the cost. If a manufacturer, renting his plant, produces a thousand engines in a year, it is clear that the annual rental is a part of the expense of producing the thousand engines. But, if the fiscal period is extended, it is equally correct to say that the production of ten thousand engines includes the total payment of rent for ten years. Exactly similar is it with machinery and patent rights. Assuming the life of each to be ten years, the expense of producing ten thousand engines includes not only rental for ten years, but as well the total cost of the machinery used and the cost of the patent rights. A purely artificial division of the productive process into fiscal years is made. It is, therefore, necessary to make an artificial and at best merely approximate division of these total expenses into the shares to be allotted to the operations of the several years.

Where rent, interest, or other time payments are made in advance, it is customary, when any such sum is outstanding at the time the annual balance is taken, to show the prepaid rent, interest, or insurance as an asset. Thus on December 1 a company may have paid $300 being six months' interest in advance on $10,000, $1,500 as a quarter's rental in advance and $1,200 one year's insurance. A Balance Sheet made December 31 would show among the assets: Interest prepaid $250; Rent in advance $1,000, Unexpired insurance $1,100, making the apportionment, as is customary in the case of short time items, proportionate to the time elapsed. Such items are sometimes called " Anticipation " or " Adjustment " accounts and are included among the Deferred Assets. But logically the line of demarcation from depreciation is extremely vague. Considering the entire productive process, the total cost of machinery and patent rights, is, as already stated, simply an expense of production. But at the end of each year part of this expense is conceived as pertaining to future, not to past operations, and therefore a portion of the cost of these so-called permanent, but really temporary assets, is treated just as prepaid rent, interest, and insurance. In other words, the asset item representing the value of the destructible or otherwise terminable instruments of production is logically similar to any of the Anticipation or Adjustment accounts which also appear among the assets.

The immediate effect of allowing for depreciation is properly to equalize profits during different years. Otherwise the total cost of the machine must appear as an expense of the year when it finally proves unserviceable. At that time, its value ceasing, it can no longer appear in the inventory. The amount of Goods on hand being thus diminished, there must needs be a subtraction from the Profit and Loss, or other Proprietorship account. But if

the original value of the discarded machine, say $20,000, was continued on the books throughout its entire life of 20 years it may roughly be said that the proprietors in the last year showed an excessive loss of $19,000, while the proprietors during the preceding 19 years overestimated their profits by the same amount. Such a procedure is improvident where there is no change in proprietors or stockholders; it is inequitable where the personnel has changed; in all cases it is dangerous to the creditors who, up to the last year, have not been shown the true condition of the company's assets.

The early writers on accounting made no allowance for depreciation, and the advance that has been made in accounting theory is still somewhat ahead of legal practice. This is particularly true in the United States. Germany, France, Belgium, Switzerland, Austria all prescribe in their statutes that depreciation must be reckoned before showing profits. In England, as in the United States, there is no such regulation of accounting practice as is found on the Continent, but the decisions of the English courts are perhaps more satisfactory and consistent than those of this country.

At least so far as material wear and tear is concerned the early case of Davison *v.* Gillies (16 Ch. Div. 347[a] (1879)) and the later one of Bond *v.* Barrow Haematite Steel Co., Lim. ([1902] 1 Ch. 353) give clear expression to the doctrine that depreciation must be reckoned. Less satisfactory is the position of the American courts. In the interesting case of Mackintosh *v.* Flint & Pere Marquette Railroad Company, the court disallowed certain items charged against operating expenses for depreciation of steamers and dining halls, saying: "No expenditure having actually been made to meet such depreciation the estimated amount thereof could not properly be deducted from earnings or net income." (34 Fed. Rep. 609.)

Unfortunately the appeal of this case was never brought to trial as a settlement was made between the litigants outside of court. But, in the earlier case of United States *v.* Kansas Pacific Railway Company, the Supreme Court of the United States held in regard to a charge for depreciation: "We are clearly of the opinion that it is not a proper charge. Only such expenditures as are actually made can with any propriety be claimed as a deduction from earnings." (99 U. S. 459.)

In the State courts there is a variety of decisions. One of the most satisfactory is a New Jersey case (Whittaker *v.* Amwell Nat. Bank. 52 N. J. Eq. 400 (1894)) where the court held that in addition to the cost of repairs there must be "a reasonable allowance for depreciation for wear and tear or constant use. . . . It cannot be successfully contended that all such machinery is not subject to depreciation." In Michigan, too, the propriety of allowing for depreciation seems to be recognized in the case of Richardson *v.* Buhl (77 Mich. 632) and it is most clearly allowed in the Superior Court of New York City in Conville *v.* Shook (24 N. Y. Supp. 547 (1893)).

But on the other hand it has been held in Georgia and California that Depreciation need not be allowed. The decisions in the latter State are particularly interesting and refer to the depreciation of the plants of water companies. To charge such depreciation against income was said by one of the judges to be "all wrong" and "not to be tolerated for a moment."[1]

A recent most important advance in the legal recognition of depreciation is found in the rules for preparing railroad accounts promulgated by the Interstate Commerce Commission. Here for the first time it is definitely pre-

[1] See Tutt *v.* Land, 50 Geo. 339 (1873); Emery *v.* Wilson, 79 N. Y. 78 (1879); San Diego Water Co. *v.* San Diego, 118 Cal 556 (1897); Redlands Water Co. *v.* Redlands, 121 Cal. 312 (1898).

scribed that a regular allowance, estimated monthly, must be made for depreciation of seven named classes of equipment. This ruling will doubtless have considerable effect in giving recognition to the correctness of the principle that depreciation is an unavoidable expense.

Two methods are used for booking depreciation. For instance in a company whose Balance Sheet, before taking account of depreciation is:

FORM 37.

Dr.	*Balance Sheet.*		*Cr.*
Plant	$100,000	Capital	$100,000
Cash	10,000	Profit and Loss	10,000
	$110,000		$110,000

an allowance of $2,500 for depreciation can be shown either by crediting that amount to the Plant account, reducing it to $97,500 or by crediting it to a separate account called Depreciation Account, or some similar title, in either case the corresponding debit being to Profit and Loss. In the latter case the Balance Sheet should be in the form below:

FORM 38.

Dr.	*Balance Sheet.*		*Cr.*
Plant at cost	$100,000	Capital	$100,000
Less depreciation	2,500	Profit and Loss	7,500
	$97,500		
Cash	10,000		
	$107,500		$107,500

It is much more satisfactory thus to exhibit the original cost of the plant and not merely to show the present depre-

ciated value. Two companies might each show a plant valued at $50,000. It is not a matter of indifference that in one case this represents the total original cost of the plant, while in the other it gives the residual value of what was once worth $100,000. It has often been claimed that to credit the depreciation to a separate account, instead of to the account showing the asset, may lead to deception. This is rendered more likely because the terms used to indicate depreciation are frequently ill defined, and there is danger that a mere recognition of depreciation may be misunderstood as indicating a reserve of profits. Indeed this fear of deception is so strong that German law, at least according to the interpretation of Rehm, makes it illegal to book depreciation by crediting a separate account and requires that it be shown by writing down the value of the asset. But any danger from this score is fully obviated by showing the credit to " Depreciation Account," not on the credit side of the Balance Sheet, but as a subtraction in an inner column of the debit side, as indicated above. Some writers furthermore claim that by carefully using the title Depreciation Account, and not the commonly used term Depreciation Fund, all confusion between depreciation and a reserve fund proper will be obviated. The Interstate Commerce Commission directs that the credit be made to accounts entitled " Steam Locomotives Equipment—Replacement," " Passenger-Train Cars—Replacement," etc., a separate account being provided for each of the seven classes of equipment on which depreciation is required.

Admitting the necessity of allowing for depreciation, the question arises as to the basis on which it is to be estimated. It is not possible to determine by inspection the present value of a machine or plant. Appraisers may make the attempt, but in doing so one element which they consider is the age of the machine and the depreciation

which time itself has wrought in its value. Some basis must be adopted which, even if not strictly accurate, can be conveniently applied. So far as depreciation by wear and tear is concerned three factors are to be considered: original cost, tenure of use, and residual value. The last-named is of importance, for a machine is often displaced before it becomes entirely worthless. Its residual value as junk is exceeded by its value as a second-hand machine, for the progressive establishment often discards machinery still capable of considerable use.

With these factors it is clear that the problem is how to divide the difference between the initial value and the residual value among the years intervening between the purchase and the discarding of the asset. Various systems are in actual use, among which the most prominent are given below.

The simplest method is to divide the total depreciation by the number of years' use, and charge the quotient as annual depreciation, or in other words to charge each year a fixed per cent. of the original cost. Thus a machine costing $600, expected to last five years, at which time it will have a residual value of $100, should each year have a charge of $100 or 16⅔ per cent. of its cost to depreciation. Expressed algebraically,

$$D = \frac{V_1 - V_2}{n}$$

in which D represents the amount of annual depreciation, V_1 equals the cost price, V_2 the residual value, and n the number of years.

The advantage of this method is the extreme simplicity and the ease with which it can be estimated. For short-lived assets it is doubtless to be preferred. Objection is sometimes made that it requires constant reference to the original cost price. If depreciation is directly subtracted

from the book value of the asset by crediting the amount to the ledger account in which the asset appears, this defect is of some significance, necessitating repeated reference to a value no longer exhibited by the accounts. But where a separate depreciation account is established and the original cost remains an integral part of the accounts, the criticism fails.

A second method is to charge a fixed percentage of the decreasing net value. This gives not a constant, but a diminishing annual charge for depreciation. In the instance given above the depreciation instead of being 16⅔ per cent. of the original cost, would be 30.12 per cent. of the diminishing net value. The annual charges would, therefore, be as follows:

FORM 39.

YEAR	Value at beginning of year.	Depreciation at 30.12% of diminishing value.
1	$600.00	$180.72
2	419.28	126.28
3	293.00	88.25
4	204.75	61.67
5	143.08	43.09
Residual value	99.99	

Expressed algebraically the formula is:

$$V_1 (1-r) (1-r) (1-r) (1-r) (1-r) = V_2$$

in which r represents the percentage of the diminishing value to be annually deducted for depreciation, and V_1 and V_2 represent, as before, the initial and the residual value of the asset. Hence is derived as a working formula:

$$r = 1 - \sqrt[n]{\frac{V_2}{V_1}}$$

which is easily solved by the use of logarithmic tables. It should be noted that this formula cannot strictly be ap-

plied where the asset has no residual value, that is where $V_2 = 0$, as for instance, in a terminable leasehold, or an expiring patent right. Practically it is applied even in such cases by assuming a nominal sum, say one dollar, or one cent, as the residual value. It will further be noted that because of the elimination of fractions the balance worked out generally will not exactly correspond with the assumed residual value of the asset, but as, at best, depreciation is a matter of estimate such small divergencies are of no significance.

The advantage of this method, in addition to its easy application to accounts showing the depreciated value of the asset, is that it makes the charge for depreciation less with each additional year. The argument in favor of this course is that in the earlier years the charges for repairs will be slight, but these will increase as the machine becomes older. As both repairs and depreciation are a charge to expenses of production, the increasing repairs, and the decreasing depreciation make a uniform charge to expense, and thus profits are more equally apportioned between the several years during which the machinery is used. Furthermore a declining depreciation is thought to correspond better with the economic facts. The difference in value between a new machine and one that is one year old is probably much greater than the difference in value of a machine which has been used 19 years and the same machine a year later. Thus Tiffany estimates that machinery in a flour mill depreciates 12½ per cent. of its cost the first year, 8 in the second, 5 in the third, 2½ in the fourth, and only 2 per cent. each year thereafter. This decreasing rate of depreciation is preserved by figuring depreciation as a percentage of the diminishing value. The objections to this method are obvious. It involves a complicated mathematical calculation, and the annual rate of depreciation gives little indication to the ordinary man of the

period required to write off the asset. Furthermore it increases the depreciation charge in the earlier years, and in the case of a new concern this may be distasteful as being an additional charge against profits at a time when business has not come into full swing and profits are low.

A third method, known as the Annuity Method, is even more complicated. It rests upon the assumption that the cost of production includes not only repairs and the depreciation of machinery, but as well interest on the amount of capital invested in the machine. Depreciation on this theory should be a sum figured as a constant annual charge sufficient not only to write off the decline in value, but also to write off annual interest charges on its diminishing value. Assuming the rate of interest to be six per cent. the reckoning should show:

FORM 40.

Dr.	*Machinery Account.*	*Cr.*
Cost price	$600.00	
Interest at 6%	36.00	
	$636.00	
		Depreciation $124.70
		Balance 511.30
		$636.00
Balance	$511.30	
Interest	30.68	
	$541.98	
		Depreciation $124.70
		Balance 417.28
		$541.98
Balance	$417.28	
Interest	25.04	
	$442.32	
		Depreciation $124.70
		Balance 317.62
		$442.32
Balance	$317.62	
Interest	19.06	
	$436.68	
		Depreciation $124.70
		Balance 211.98
		$436.68
Balance	$211.98	
Interest	12.72	
	$224.70	
		Depreciation $124.70
		Balance 100.00
		$224.70
Balance	$100.00	

Algebraically the formula is derived as follows:

$$V_1\,R\text{–}D)\,R\text{–}D)\,R\text{–}D)\,R\text{–}D)\,R\text{–}D = V_2$$

in which R equals 1 + (the rate of interest), or in this case 1.06 and D the annual charge for depreciation.
Hence

$$V_1R^5\text{–}D(R^4+R^3+R^2+R+1) = V_2$$

or in simpler form:

$$D\frac{R^5-1}{R-1} = V_1R^5 - V_2$$

and

$$D = V_1R^5 - V_2 \div \frac{R^5-1}{R-1}$$

or generally:

$$D = V_1R^n - V_2 \div \frac{R^n-1}{R-1}$$

These values are obtained easily by the use of logarithms, or still more simply by the use of actuarial tables prepared for the use of insurance companies; for evidently V_1R^n is the accumulated value of V_1 at 6 per cent. compound interest for n years, and the coefficient of D is the accumulated value at 6 per cent. interest of an annuity of one dollar paid at the end of each of n years. Such values are given in ordinary actuarial tables.

The use of this system implies that at the time interest is charged to the plant there is a corresponding credit to interest account. Consequently the net result to Profit and Loss account taken as a whole is that there is an equal annual charge of depreciation, and a diminishing annual credit for interest.

An objection to the last-named method is that it introduces the custom of marking up the value of assets by an allowance for assumed interest. In this particular case

no inflation of profits results because there is an increased charge against profits for depreciation. But it is questionable whether it is not so dangerous a practice as to make objectionable anything which seems to justify it. Furthermore, unless interest is charged on all capital invested, not merely on that subject to depreciation, there is a logical inconsistency in reckoning it in depreciation. And finally, its value consists in separating the profits of manufacturing, or other business operations, in which depreciating capital assets are used, from the profits derived from the use of capital. This is so because the large depreciation charge goes into the Trading account,[1] while the countervailing credit to interest goes into the Profit and Loss account proper.

The three methods of figuring depreciation have this marked difference. The annual charge against profits decreases where depreciation is a fixed percentage of the diminishing value of the asset. It is constant where depreciation is a fixed percentage of the cost; it increases where the third method is used. A comparison of the amount annually charged to depreciation under each of the methods described is shown by the following table.

FORM 41.

Depreciation of Asset Costing $600 *with Estimated Residual Value at End of Five Years, of* $100.

YEAR	20% on cost	30.12% on diminishing value	Annuity system, 6% interest.	
			Gross Charge	Gross, less interest
1.....	$100	$180.72	$124.70	$88.70
2.....	100	126.28	124.70	94.02
3.....	100	88.25	124.70	99.66
4.....	100	61.67	124.70	105.64
5.....	100	43.08	124.70	111.98
Total.....	$500	$500.00	$623.50	$500.00

[1] See Chapter XV.

Authorities differ as to the desirability of one or other of the three methods. Dicksee's high authority favors the first for short-lived assets, the second for machinery in general, the third for long-time terminable leaseholds and similar assets. Where the courts prescribe depreciation they have generally allowed the basis and, indeed, the period to be left to the discretion of the company authorities. Even in Germany where statute law is most precise, demanding that depreciation be reckoned, and in certain cases even prescribing the period, there is no legal preference given to one or other of the methods of calculation. Practice, however, in England, Germany, and the United States seems to favor, in general, the taking of the diminishing value of the assets as the basis of calculation. But the Interstate Commerce Commission definitely prescribes that, in figuring depreciation on the seven classes of equipment on which depreciation is compulsory, the first method, that of dividing the total shrinkage in value by the number of years of estimated life, shall be employed.

In discussing the relative merits of the differing systems of depreciation, it must be borne in mind that allowance for depreciation is only part of a broader scheme whose purpose is to equalize charges between different years. It has been shown that the real cost of manufacturing includes both repairs and depreciation of plant. The total amount paid on both these accounts is properly a charge to the total cost of production during the period that the plant lasts. But the accidental fact that actual payments are not made uniformly is no reason why the annual charge should vary. One does not consider the semi-annual installment of rent or interest as an expense peculiar to the month in which it is paid. Neither should the fact, if it be one, that a machine declines in value more in the first year than in the last year of its life

justify making a greater charge to costs in the former year. The complete and scientifically correct method of figuring depreciation compels that there should be at the same time a recognition of the necessity of repairs and a simultaneous apportioning of both repairs and depreciation between the years irrespective of the time when the expense is actually incurred. There should, therefore, be two estimates made, one of the total shrinkage of value during the life of the machine, the other of the total cost of repairs during the same period. This being done there should be an equal apportionment of the sum of these two between the several years. In other words there should be an equal annual charge to expense and a credit to Depreciation account and to Renewal or Repairs Account. Replacement of outworn machines or repairs made can then be charged to these accounts. If the estimates are made with approximate accuracy there will result a distribution of expense between the several fiscal periods. But where no such uniform annual charge is made to cover repairs, and where expense is annually charged with the repairs actually made, sometimes more and sometimes less, a more correct final showing will be secured by making a sliding charge to depreciation, as is done where it is based on a fixed percentage of the diminishing value. This does not mean that the allocation of depreciation in this manner is in itself more correct, but that this error in apportionment offsets and neutralizes the increasing charges for repairs. But this is at best a rather awkward rule of thumb. The fuller, more scientific treatment of both repairs and depreciation, as being properly a uniform annual charge, is coming more into favor, and is implied in the scheme of accounts promulgated by the Interstate Commerce Commission.

Whatever uncertainty there may be as to the three methods of depreciation already described, there is no doubt as

to the illegitimacy of a fourth system that is not infrequently used. This is to make the amount annually written off for depreciation somewhat loosely proportionate to profits. The natural inference from this practice is that in the absence of profits no depreciation is to be reckoned; while the fundamental principle involved is that depreciation is something inexorable, inevitable, an expense to be estimated before it is possible to determine profits. This view is accepted not only by accountants but in Germany at least has been given legal authority by judicial decisions. The correct attitude has been taken in this country, too, by the Interstate Commerce Commission which has adopted as its rule the statement made by P. D. Leake: "One of the most vital matters connected with productive industries and trading concerns is the regular assessment with substantial accuracy of the annual net profit or loss which has resulted from the operations of each year; and unless a near approximation to the outlay on productive plant which has expired within each year is made and fully provided for out of gross revenue, no correct statement of profit or loss can be obtained. . . . No Profit can exist until Expired Outlay on Productive Plant has been provided out of Gross Revenue."[1]

Present practice is unfortunately not up to this correct principle. Any recognition of depreciation at all being relatively uncommon in the accounts of American corporations, it is not to be wondered at that the few companies which show depreciation in prosperous years, when profits are large, grow faint hearted when business is poor. A few exceptions are to be noted, among which may be mentioned the Allis-Chalmers Company which in 1906 charged nearly $300,000 to depreciation, although that resulted in a total deficit of nearly $400,000.

[1] Interstate Commerce Commission. Accounting Series, Circular No. 13.

Depreciation should cover all decline in value due to the use of productive assets. No less than this is required by accounting prudence. But while this standard is frequently not reached, it is not unusual to find corporations charging to depreciation sums far in excess of the actual decline in value. Yet such excessive depreciation offends the very principles of accounting. To charge too much to depreciation is no less a deviation from accuracy than to charge too little. Yet the two transactions are very differently regarded by the public and by the profession. To charge too little is considered dishonorable, to charge more than enough is considered a sign of conservatism and is not only done by the most reputable corporations, but where this occurs the action is very frequently praised by financial writers.

The effect of excessive depreciation is to conceal the amount of profits, to create what is known as a "Secret Reserve." Depreciation is normally charged to expense, or at least to Profit and Loss. If, in fact, there has been no actual decline in value, the result is that the Balance Sheet shows an understatement of both assets and profits. The questions involved are, therefore, those of undervaluation of Assets and Secret Reserves both of which are elsewhere discussed. Here it suffices to call attention to the fact that an excessive depreciation, while generally condoned, is still a divergence from an ideal accounting, and its effect is the establishment of a Secret Reserve.

The question is frequently raised as to whether depreciation provides for the replacement of the wasting article. The question itself, although sometimes propounded by accountants, involves a misapprehension. Depreciation in itself merely means that there has been a decline in the value of certain assets. If this results in a net loss evidently there is nothing with which to replace a destroyed asset. For instance, a company with Plant $100,000, Capi-

tal $50,000, and Debt $50,000 suffers a depreciation of two per cent. If other expenses just balance income, this means a net loss of $2,000. The Balance Sheet then would read:

FORM 42.

Dr.	*Balance Sheet.*		*Cr.*	
Plant	$100,000		Capital	$50,000
Less depreciation	2,000		Debt	50,000
		$98,000		
Loss		2,000		
		$100,000		$100,000

The plant is the only possession of the company, and there are no other free assets with which the loss can be made good. But where, after the deduction for depreciation, there is a net profit, the case is different. Assuming that the expenses other than the depreciation were $10,000 and the income $12,001 the balance shows:

FORM 43.

Dr.	*Balance Sheet.*		*Cr.*	
Plant	$100,000		Capital	$50,000
Less depreciation	2,000		Debt	50,000
		$98,000	Profit and Loss	1
Other assets		2,001		
		$100,001		$100,001

In such a case the depreciation account signifies that other assets are now held equal to the depreciation. Part of the original plant has disappeared, but its value is represented by other assets. Evidently so, for if a decline in the value of one asset has not resulted in a net loss, there must, by the most fundamental principle of double entry bookkeeping, be an equivalent increase in the value of another asset.

The presence of a Depreciation Account signifies, then, the substitution of some new, presumably some floating asset in place of part of the value of one of the fixed assets. Whether this implies the presence of means to replace the old asset, or not, depends on the interpretation of the terms used. If the new asset consists of cash, evidently there are means on hand for replacement; if the assets exist in the form of some new fixed asset, that in itself does not directly give ready money. Constructively there is power to replace because of the equivalence of assets. Practically that power may be hindered by inability to realize on the asset. But a similar difficulty would exist under any circumstances; for the existence of a special replacement fund, composed, say, of stock exchange securities might not always prevent difficulty in raising funds in a pressing emergency. The existence of a depreciation account implies, except in a Balance Sheet showing a net loss, the presence of new assets, that is of assets acquired since the purchase of the plant, of equivalent value. Whether these new assets furnish means of replacement depends on their nature and the conditions of the general market.

An apparent exception occurs where the new wealth is used to pay off a debt, when the Balance Sheet becomes:

FORM 44.

Dr.	*Balance Sheet.*		*Cr.*	
Plant	$100,000		Capital	$50,000
Less depreciation	2,000		Debt	48,000
		$98,000	Profit and Loss	1
Other assets		1		
		$98,001		$98,001

Here the cancelation, presumably, gives an equivalent borrowing power, and the presence of additional assets or

the lessening of debts (that is the cancelation of negative assets) are practically identical.

In addition to the loss from wear and tear even material goods are subject to further depreciation from economic changes. This includes changes in the residual value due to outside conditions, and, if it can be reckoned, the likelihood that the machine will be displaced by new models long before it is worn out. Experience may show that on the average a given class of machinery will be serviceable for twenty years, but that invention is so active that it is more profitable to displace the machines and buy new models as often as once in ten years. This is confessedly vague and indefinite, and implies the ability to calculate the future activities of inventive genius. The process is, of course, constantly taking place. Indeed, the success of American iron masters has sometimes been attributed to the readiness with which they discard serviceable machines in order to install new inventions. If an airship as now made would certainly run with undiminished mechanical efficiency for thirty years, probably no one would object to the statement that long before that time the present models will be displaced by some new and greatly improved type, and that a calculation to that purport should wisely be made. A more practical illustration is found in the lasts owned by manufacturers of shoes. Materially, these will serve for an indefinite number of years without destruction. Practically, it is a matter of certainty that the present models will be displaced by fashion long before they are worn out, and, as a matter of fact, the accumulated stock of out-of-date lasts is one of the serious burdens of shoe factories. The same principle applies to patterns used in foundries, sets of cards for Jacquard looms, and other assets whose continued serviceability is limited by the dictates of fashion rather than by wear and tear.

Depreciation in all such instances is scarcely to be dis-

tinguished from a reserve created to provide against contingencies. If the loss of value is certain enough to be calculable it approximates closely to ordinary depreciation; if less certain and yet not to be neglected it resembles rather a reserve discussed in Chapter XIII.

The depreciation, or more properly speaking, the amortization of nonmaterial assets is, of course, not due to wear and tear, but is no less inevitable. Where there is a time limit, as, for instance, in the case of a ten years' mining concession, the depreciation must be accomplished within that period. In many cases it is legitimate to charge off the value even more rapidly. Thus a copyright is likely to become of little value before its legal termination. One general rule is here applicable, namely: The more indefinite or uncertain the value of the asset the more rigid and rapid should be its depreciation.

The application of these general principles governing depreciation to the various classes of assets, and the determination of the proper rate to be allowed in each case is a matter of the greatest difficulty. Material goods are subject to depreciation for both physical and economic causes. Physical loss or deterioration is a question whose ultimate decision is in each case to be based on the opinion of technical experts. Only thus can an estimate, even approximating correctness, be made of the probable life of the asset and its residual value. The nature of the machine, the intensity of work, the amount of repairs, the character of the operations, and many other technical matters enter into the calculation for machinery. Equally is each building to be considered by itself, for the nature of its construction, the use to which it is put, the climate to which it is exposed, the expenditures to be made in repairs, and other items are effective in determining its duration. Evidently in so complicated a problem, with so many uncertain, if not unknown quantities, no one even

attempts minute accuracy. All the more need for making the calculation as carefully as possible.

It is impossible to lay down specific rates of depreciation which would have any absolute value. The following figures are those given by Dicksee, and indicate roughly the rates which are considered satisfactory where conditions are favorable. In each case the rates are based on the diminishing value.

Asset	Rate of Depreciation
Engines	10 –12½ per cent.
Boilers	12½–20 "
Shafting	5 – 7½ "
General machinery	7½–10 "
Special machinery	10 –25 "
Patterns	25 –33⅓ "
Horses	15 –25 "

Somewhat similar tables are given by Tiffany, in which greater attention is given to buildings, and in which variations are given to correspond somewhat with details of construction. But it must ever be borne in mind that no general rules can be laid down and each problem must be specifically treated. This doctrine is admirably laid down by the Interstate Commerce Commission which when asked to specify the rates of depreciation to be charged, replied: "Conditions under which equipment is used vary so greatly that no uniform rate of depreciation for all roads could be reasonably determined. The proper rate will, of course, vary inversely with the life of the property to which it pertains, and its determination must take into consideration whatever affects the life of the property. Each reporting officer should determine the rate to be used according to such experience tables as he may be able to construct from equipment records."[1]

[1] Accounting Series, Circular No. 12a, p. 2, Case 109.

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CHAPTER VIII

CAPITAL STOCK

I. Issued for Cash

THE Capital account, in the initial bookkeeping equation, represents the net wealth of the proprietor. It shows in a single item the net value of all the items of wealth, positive and negative, which are set forth in detail in the various Goods accounts. If the proprietor is an individual, the opening entry in the Capital account represents the net wealth with which he starts his business. If it is a partnership, separate Capital accounts are established to show the amount contributed by each of the partners.

The keeping of the Capital account of individuals or partnerships is extremely simple. The original contribution made by each of the proprietors is definitely known, and there is ordinarily no doubt as to its value. This original contribution is accordingly credited to the account representing the capital. This is frequently headed with the name of the proprietor, with perhaps a further statement that it represents a capital contribution, and is not a loan, thus: John Smith, Capital Account. The actual proprietorship interest in the business, however, necessarily changes from day to day with each transaction, with the incurring of each expense, the suffering of any loss, or the taking of a profit. While each of these changes might logically be entered at once in the proprietor's Capital account, there is good reason, as was shown in Chapter I, for entering these daily changes in temporary proprietorship accounts, which at stated periods, customarily at the

end of the year, are all gathered into the Profit and Loss account. The balance of this account shows the net change in the proprietor's wealth which has occurred during the course of the year through business operations, or the misfortunes incident thereto. When the net change has been thus ascertained, it is transferred to the proprietor's Capital account, so that at the end of each year, as at the beginning of the business enterprise, that account shows, as accurately as may be, the net wealth of the proprietor. There is nothing fixed, arbitrary or conventional regarding the Capital account of the private trader. If he starts with an investment of $10,000 that amount appears as the initial entry to the credit of his Capital account. If he gains $2,000 profits during the year and withdraws from the business $1,500 for outside use, the Capital account is credited with the former sum and charged with the latter, so that at the beginning of the new year his Capital account again starts out with a balance, $10,500, which in a single sum represents the net wealth of which he is for the moment possessed. If in the second year the results show a loss of $1,500 this, at the end of the year, is in turn charged to the Capital account, which starts out the new year with a balance showing that the net wealth has been reduced to $9,000. From year to year, then, the account shows the actual net wealth, making no discrimination between the original capital contribution, the surplus or deficit due to business operation, or the alterations due to withdrawals or additions of capital by the proprietor.

In corporations, however, the treatment of capital is not so simple. The original entry does not necessarily represent the amount of wealth which has been contributed by the stockholders; increments to the net wealth are not annually added to the original sum, which remains constant at the par value. The Capital account of a corporation represents only the sum at which the company

is incorporated, the par value of the Capital Stock. The actual present net wealth is obtained only by combining with this item one or more other accounts, kept separate on the Balance Sheet and in the ledger, which show variations from this nominal capital and alterations in it due to business operations and other changes.

The accounting problems having to do with the Capital account are therefore, mainly, those connected with the capital of corporations. They arise generally from a divergence between the nominal or par value of the Capital Stock issued and the actual net wealth of the corporation. But even these problems would, in most cases, cause no difficulty were it not for the further fact that in many cases the corporation is unwilling to show clearly its exact condition. It may have done some financing which is prohibited by law, and it then becomes a problem how to present the accounts in such a way as to conceal this illegal action. Or it may be that not law, but business prudence, has been violated and again it becomes a problem how to conceal this fact in the company's Balance Sheet. The accountant should have no interest in solving such problems, nor is he, as an accountant, primarily interested in the exact legal status of certain financial transactions. For instance, in some states a corporation may legally purchase its own stock in the market, in others this is prohibited. In either case, the accountant, as such, is concerned only in showing that the purchase has been made, not troubling himself as to the legal problem, and still less attempting to find a way in which to conceal the fact that such a purchase has been made. If it is kept clearly in mind that the only legitimate purpose of accounts is to show the truth, and if accounts are kept strictly to this rigid standard, the problems of the accountant will be materially lessened.

When a new corporation is started, the first step, nor-

mally, is to secure subscriptions for the Capital Stock authorized by the charter. If such subscriptions are obtained for the full authorized capital of the company the initial condition is then that the company begins with an authorized capital of a given amount, the net wealth which it represents being composed entirely of promises made by the subscribers to pay that amount. In this initial stage, then, the Balance Sheet is:

FORM 45.

Dr.	*Balance Sheet.*	*Cr.*
Subscriptions..... $100,000	Capital Stock..... $100,000	

This may be assumed to be the normal opening Balance Sheet for a corporation where the stock is fully subscribed. It is perfectly correct, for while no wealth has been paid into the treasury of the company, the signing of the subscription list creates an obligation on the part of the subscriber which is legally collectible by the company. It is as truly an asset, as the accounts receivable or the notes receivable held by a merchant.

As the subscriptions are called and paid, the treatment is identical with that of any other form of account receivable when it is paid to the proprietor. The cash received is debited, the subscription account is credited, and gradually the item Subscriptions disappears from among the assets, and there is substituted therefor Cash or some other form of property.

But not infrequently the incorporators desire to begin business without securing subscriptions for the entire authorized Capital Stock. At the beginning of operations the entire sum, here $100,000, is not needed, and it is thought better not to receive subscriptions until later when it can be profitably used, and when the evidence of

successful operation will perhaps make it easier to secure the desired subscriptions. Assuming that, of the $100,000 authorized Capital Stock, subscriptions are obtained for only one-half, or $50,000, the booking of the transaction is variously made, the more common forms being given below.

FORM 46.

Dr.	*Balance Sheet.*	*Cr.*
Cash	$50,000	Capital paid in	$50,000

FORM 47.

Dr.	*Balance Sheet.*	*Cr.*
Cash	$50,000	Capital Stock	$100,000
Unissued Stock	50,000		
	$100,000		$100,000

FORM 48.

Dr.	*Balance Sheet.*	*Cr.*
Cash	$50,000	Capital Stock outstanding. $50,000	
Unissued Stock	50,000	In treasury... 50,000	
			$100,000
	$100,000		$100,000

FORM 49.

Dr.	*Balance Sheet.*	*Cr.*
Cash	$50,000	Capital authorized	$100,000	
		Less amount held in Treasury... 50,000		
				$50,000
	$50,000			$50,000

Many accountants argue in favor of the first form given above, saying that $50,000 is all that the company has received, that it is all that serves as a guarantee to creditors; and that the unsubscribed and unissued stock is virtually nonexistent. The same idea is embodied in some laws. In German law, it is not permissible to show any capital not subscribed for. In Austria the law relating to one class of corporations definitely states that unissued stock may not appear either in the Balance Sheet or in any other statement, and the Companies Act of Quebec, passed in 1907, says: " Capital Stock shall consist of that portion of the amount authorized by the charter, which shall have been *bona fide* subscribed for and allotted." Despite such legally authoritative statements there is some ground for holding that Form 46 is not altogether sufficient.

The argument that unsubscribed and unissued stock must not appear at all in the accounts of the company because it is nonexistent is somewhat specious. The amount of depreciation of machinery or plant is no less nonexistent. Indeed, unissued stock has a certain reality, for it does constitute a means by which directors can, at least in times of prosperity, raise funds, while the depreciation of property represents an absolutely nonexistent quantity. Yet the appearance of depreciation, in the form of a Depreciation Account, is a recognized and legitimate convention of accounting.

While unsubscribed stock is not an asset so far as the creditor is concerned, yet the existence of such stock, subject to issue at the discretion of the directors, is a matter of which the stockholder should be informed. Perhaps the desired information is sufficiently given in a foot-note, or other memorandum attached to the Balance Sheet, which is the form used by British companies. But to many accountants it seems desirable to show the total authorized

capital stock as an item entering into the accounts proper, with the unissued stock as an item appearing elsewhere in the Balance Sheet.

This may be accomplished in various ways, three different methods of presenting the facts being shown in Forms 47–49 above. The first of these is one very frequently found in American reports, and exhibits the entire unissued stock as an asset. Not infrequently the term "Treasury Stock" is used to designate unissued stock thus held, a practice which has been severely criticised, on the ground that the term Treasury Stock should be limited to stock which has once been issued and subsequently reacquired. The objection is, however, made that in this form the Balance Sheet gives an exaggerated and perhaps misleading statement of the actual capital of the company. This objection can, however, easily be removed by making the modification shown in Form 48 where the total authorized Capital Stock appears as a significant item in the extended column of the Balance Sheet, yet attention is called to the fact that part of the stock is unsubscribed and that it appears among the assets. But a still better form is the last one given above, where under the general rule that a negative item can be shown in the Balance Sheet as a subtraction (see page 53 above), the Unissued Stock, instead of appearing on the left hand of the Balance Sheet, is subtracted from the item Authorized Capital. This is the form used in the Balance Sheet of the Atchison, Topeka and Santa Fe Railway, as shown on page 61.

It should be noted that while there may be little difference in the Balance Sheet obtained in Form 46 and that in Form 49, yet there is a real difference in the ledger accounts. In the former, the original Journal entry presumably corresponds with the Balance Sheet given; there is no account showing Unissued Stock to be found in the Ledger, and the Capital Stock account, in the ledger shows

only a credit of $50,000. But in all the other forms, although presented differently in the Balance Sheet, the ledger entries are identical and all differ from Form 46, for in each instance Unissued Stock, or some other similar account, is to be found in the Ledger showing a debit balance of $50,000, and the Capital Stock account proper shows a credit for the entire $100,000.

Very similar is the problem of the treatment of the capital stock which after issue has been reacquired by the company. Aside from the question of the legality of this action, which is not an accounting question at all, the discussion turns on whether stock so acquired is a real asset, and, if so, how it is to be represented in the accounts. The argument against the legitimacy of showing unissued stock, is also used, though with less cogency, regarding repurchased stock. In a certain sense any return of capital stock to the issuing company may be considered as a virtual cancelation of that amount of the previously issued stock. That seems to be the distinct attitude of French law, and, according to Simon, is to be inferred from, although not clearly expressed in, German law. A distinction may be made according to the purpose for which the stock is acquired. If it is done with the intention of reducing the Capital Stock, certainly the stock so acquired and canceled should be deducted from the amount of outstanding stock, and should not appear as below:

FORM 50.

Dr.	*Balance Sheet.*		*Cr.*
Plant and other assets...	$120,000	Capital stock authorized... $100,000	
Investments.....	15,000	Less canceled stock..... 10,000	
Cash.....	5,000		$90,000
		Bonds.....	50,000
	$140,000		$140,000

But if the stock is not acquired with the intent of reducing the capitalization, and is not canceled, accounting practice in this country certainly justifies and, indeed, requires that it be shown among the assets. Where this is the case the best form for presenting the Balance Sheet is:

FORM 51.

Dr.	*Balance Sheet.*		*Cr.*
Plant, etc.	$120,000	Capital Stock outstanding	$90,000
Investments	15,000	Held in Treasury	10,000
Treasury Stock	10,000		$100,000
Cash	5,000	Bonds	50,000
	$150,000		$150,000

which is the form used in the accounts of the Chicago and Northwestern Railway. There is, however, no criticism of an alternative form, which indeed some prefer, in which the item is not listed among the assets, but appears as a deduction from the total capital stock on the liabilities side, thus resembling Form 49.

It is, however, misleading, and hence incorrect, to allow the stock held in the treasury to be included in some general designation which does not clearly show that it is the company's own stock. In the statement above, to include both Investments and Treasury Stock under the single title Investments would be thus misleading. This decidedly objectionable form is not infrequently used, and occasionally, it may be, to the deception of creditors.

The use of the phrase Treasury Stock to designate live stock reacquired by the issuing company is thoroughly recognized in this country, although the term seems not to be used in England, nor are equivalent terms used in France and Germany. Some writers claim that this is the

only proper use of the term, and that to apply it to unissued stock is incorrect. An examination of American balance sheets will give numerous instances where Treasury Stock is used as including unissued stock. But there is an important difference between reacquired and unissued stock in that the former can legally be sold by the company below par without making the purchaser liable for the discount. To indicate this distinction would seem desirable in accounting, and this could easily be done by limiting the term Treasury Stock in the way mentioned; and calling stock which has not been issued or subscribed for by some other designation, e. g., Unissued Stock.

Altogether different from the foregoing cases is the company which has received subscriptions for all of its capital but has not yet called for payment of the whole amount subscribed. If, for instance, the capital stock of $100,000 has been all subscribed for, but only $50,000 has been called in, it is really incorrect to present the capital as only $50,000 and the assets of the same amount without reference to the uncalled subscriptions. Yet practice is not uniform on this point, and to what extent the uncalled subscriptions are to be included in the accounts proper, and how far they are only to be referred to as an explanatory item is not uniformly agreed upon. In England the standard form for Balance Sheets, that which until recently was given as a model in Table A of the Companies Act (see page 66), excludes the uncalled subscriptions from the accounts proper, the form used being:

FORM 52.
Liabilities.

Nominal capital (10,000 shares of £10 each)....	£100,000	
Capital called up (£5 per share).....	£50,000	
Less calls in arrears.....	100	
Capital paid in.....		£49,900

In this the Nominal Capital is no part of the Balance Sheet proper, and a distinction is further made between uncalled subscriptions and those called but in arrears. The capital actually paid in alone shows in the extended column.

In France, however, the uncalled subscriptions appear generally as an asset; and in Germany, while not always shown, the omission is said by Rehm to be contrary to both law and principle. In this country it is less common to issue stock not fully paid up, but the propriety of showing the uncalled subscriptions as assets is backed by the authority of the frequently cited case of See *v.* Heppenheimer stating explicitly that it is a " rule of the common law that the unpaid subscriptions to the capital stock of a corporation form an asset for the payment of the debts thereof." Where the calls are in arrears it may be better to indicate that fact clearly, as is done in the English form above, on the principle that a call in arrears is of doubtful value at best. Either of the forms given below is satisfactory.

FORM 53.

Dr.	*Balance Sheet.*		*Cr.*
Cash	$50,000	Capital fully subscribed	
Uncalled subscriptions	50,000	Paid in	$50,000
		Subscriptions uncalled	50,000
	$100,000		$100,000

or:

FORM 54.

Dr.	*Balance Sheet.*		*Cr.*
Cash	$50,000	Capital fully subscribed	$100,000
		Less subscriptions uncalled	50,000
		Capital paid in	$50,000
	$50,000		$50,000

It is sometimes stated that it is illogical to include the contingent asset of uncalled subscriptions in the Balance Sheet, since, as a rule, neither contingent assets nor liabilities are taken into account. Thus, in the case of a bank, where the stockholder who has paid up his subscription in full is liable to a further assessment of 100 per cent. if that is needed to pay off creditors, this additional contingent asset is never included in the Balance Sheet. But there is a marked difference; the additional liability of the shareholders of a bank is only available in case of insolvency, while the subscriptions are an asset on which the directors can at any time call, and are therefore more evidently an item to appear in the Balance Sheet.

Subscriptions to capital stock are not infrequently made at a premium. This is particularly common in the case of banks, where for one or another reason the institution prefers to start in with assets in excess of the nominal capital. It is also common where an established company increases its capital stock in circumstances which make investors glad to pay a premium for a share in an enterprise which is already eminently successful. In all such cases the premium is economically a capital contribution and nothing else; but the requirement that the capital appear at its par value makes it necessary to enter the sum thus paid under some other head. The customary title is "Surplus" which is the term always used by National banks, which frequently capitalize thus in order to escape the necessity of annually withholding one tenth of the profits to form a compulsory reserve amounting to twenty per cent. of the nominal capital. The only alternative to crediting the premium to Surplus, or some practically identical account such as Reserve, is to credit it to Profit and Loss, a procedure which is positively prohibited by German law, permissible under English law, but in any case condemned by business prudence in all countries. The

premiums being no part of the real profits of the business should be specially held in some account which indicates that it is not intended for distribution in dividends.

At times the accountant meets difficulty in determining whether or not a premium has been paid on the stock, and this unavoidable uncertainty is sometimes used as a means of showing an apparent surplus when none exists. To take a familiar illustration, a company is organized with Capital Stock of $100,000. A contract is made whereby an owner of a plant agrees to turn over his property valued nominally at $90,000, and $9,000 cash in return for $90,000 stock. The interpretation of this transaction frequently made is that the cash contributed is a premium on the stock. A more conservative interpretation is that the real value of both plant and cash is only $90,000, so that no surplus exists. Sometimes an attempt is made to base the interpretation of the transaction on the terms on which the other stock is placed. If this is subscribed for, the subscription to be paid in cash at the rate of 110, the presumption is evident that the stock given in exchange for the plant and cash was also really taken at a premium of practically that percentage, and that the surplus really exists. But even this criterion is faulty. The company might be capitalized say, at $90,100, of which $90,000 is given in exchange for the plant and $10,000 cash. It would be a simple matter for the promoters to subscribe for the remaining $100, at 110, or at any other exorbitant rate, if by so doing they could establish the surplus which is claimed in the purchase of the property. The reality of a claimed surplus is, therefore, not to be established by any such simple rule of thumb, but can be determined only by a careful estimate of the real value of that which is given in payment of the subscription.

Thus far it has been assumed that all subscriptions for Capital Stock are to be paid in full at some time. This

is the well-established principle which has been accepted by all courts. But in some instances a distinction has been made between stock subscribed for, and stock sold in the market. A subscription not paid in full carries with it a corresponding liability to pay the unpaid portion, which from the point of view of the corporation constitutes an asset. Yet in some circumstances the courts have allowed the sale of stock for less than par, the stock to appear as full paid. The most important case on the subject is that of Handley *v.* Stutz (139 U. S., 417 (1891)). In this case an embarrassed company sold some of its stock for less than par in order to raise funds to enable it to carry on its business. The court, while upholding the general principle that creditors have a right to rely on the subscribers having paid par for their stock; nevertheless, in the exceptional case of a going concern which cannot place its stock at par, sanctions selling it at the best price obtainable. It should be noted that this decision applied only to exceptional conditions; that Chief Justice Fuller gave a very able dissenting opinion; that Justice Brown, who himself rendered the decision, declared in the later case of Camden *v.* Stuart (144 U. S., 104 (1892)), that it must not be used to evade the obligation of subscribers to pay for stock which obligation " cannot be defeated by a simulated payment of such subscription, nor by any device short of an actual payment in good faith "; and that an able legal critic has declared that, " the reason and conscience of the profession have been shocked at the doctrine " enunciated in Handley *v.* Stutz.[1]

In the state courts, moreover, it has recently been held that " one who receives stock as full paid without paying for it occupies the position of a subscriber who has not paid his subscription." (See *v.* Heppenheimer, 61, Atl. 859.) In England, too, the highest court has given a most

[1] E. W. Huffcut, 26 Am. Law Rev. 865.

drastic decision in Ooregum Gold Mining Company of India *v.* Roper ([1892] A. C., 125), where the House of Lords held that when a corporation sells its new stock below par—even though at double what the old stock commands in the market—the purchasers are liable for the discount to the corporation as well as to the creditors of the company. In this decision the Lord Chancellor said: "It may be that such limitations on the power of the company to manage its own affairs may occasionally be inconvenient, and prevent its obtaining money for the purposes of its trading on terms so favorable as it could do if it were more free to act. But, speaking for myself, I recognize the wisdom of enforcing on a company the disclosure of what its real capital is and not permitting a statement of its affairs to be such as may mislead and deceive those who are either about to become its shareholders or about to give it credit."

In England, too, statute law requires the payment of full cash value for stock, save that when the articles of the company make special provisions therefor, the Companies Act of 1900 allows the payment of a commission for the placing of shares. But in the revision of the Act in 1907 an amendment, which had passed the House of Lords, generally authorizing the issue of shares of established companies below par, was rejected by the Commons, and withdrawn by the Lords.

But where, for any reason the stock is issued for a less amount of cash than the par value, and the courts free the purchaser from any liability for demand for further payments, the accounting is still a simple matter. If cash has not been paid in full, and if the remaining percentage is not a claim against the holder to appear as an asset of the company, the only alternative is that it must appear as a discount on the issue of the stock, and must be treated similarly to the discount taken off a note or bill discounted.

There may be some question as to whether the discount should immediately be charged to the Profit and Loss account, or whether it may be placed as a charge elsewhere. But there is no dispute that a cash discount on stock issued must clearly show in the accounts of the company, and such is the practice wherever discounting is openly allowed, as, for instance, in the limited cases in England, or in certain companies in Austria. The understanding of this simple statement opens the way for a discussion of the more difficult problem of the method of treating stock issued not for cash, but in purchase of property which is found in the following chapter.

The reduction in the amount of Capital Stock, at least when performed directly, offers no particular problem of accounting. If it is decided to reduce the capital, assuming that the legal requirements are complied with, the booking is identical with that in case of the payment and cancelation of any other credit balance, the cash paid out and the reduction of the liability balance offsetting each other. Or, if the stock retired is redeemed not with cash but with bonds, as was the case in the refunding operations of the United States Steel Corporation, the bonds paid out offset the Capital Stock retired, just as in a merchant's books the Bills Payable given to a creditor offset the amount previously standing as an account payable. But at times the retirement of the stock is made dependent on the existence of surplus profits, and the payment to the stockholders is treated as if it were actually a charge against profits. Provision for the retirement of stock may be made in precisely the same manner as is the payment of bonds by a sinking fund, as described fully in Chapter XIV. Evidently the same difficulty arises in either case. If the retirement of capital, not being a loss transaction is yet charged against profits, there must be created a corresponding credit, sometimes called Retired Stock,

sometimes, more correctly, "Reserve created by the retirement of capital out of profits." In any event when the stock has been purchased for the purpose of reducing the amount, it is misleading to carry the canceled stock among the assets. The Capital Stock account should itself be debited, for whatever argument there may be in favor of carrying live Treasury Stock as an asset, there can be none in favor of retaining stock which has actually been canceled. Such stock is certainly nonexistent.

Where the stock is reduced not by purchase but by surrender of part of their holdings on part of the stockholders, sometimes the case where the company has met with losses and desires to remove the deficit from the Balance Sheet, the reduction of the capital acts to create a corresponding Surplus. This may be used as a fund to which the existing deficit, if such there be, is charged. To illustrate: a company with the following:

FORM 55.

Dr.	*Balance Sheet.*	*Cr.*
Assets	$140,000	Capital Stock	$150,000
Deficit	10,000		
	$150,000		$150,000

arranges with the stockholders to surrender twenty per cent. of their holdings to cover the deficit and provide a surplus. After the reduction of the capital stock the books would show:

FORM 56.

Dr.	*Balance Sheet.*	*Cr.*
Assets	$140,000	Capital Stock	$120,000
		Surplus	20,000
	$140,000		$140,000

CHAPTER IX

CAPITAL STOCK

II. Issued for Property, etc.

THE subscription to stock demands the payment of its full par value, and there being " in equity, no distinction between a party who makes a formal subscription for stock and fails to pay for it and one who accepts a full paid certificate without paying for it," there is the general assumption that all stock issued, with certain minor exceptions noted in the preceding chapter, is to be paid for in full value. Where the payment is to be made in cash the verification of this assumption is easy and simple. The real difficulty comes where stock is issued in exchange for property. Here, too, the general assumption is that full value is given. As has been clearly stated in New Jersey, " the distinction between the contemplated issue of corporate stock for property and its issue for money lies not in the rule for valuation but in the fact that different estimates may be formed of the value of property." (Donald *v.* American Smelting and Refining Company, 48 Atl. 772.) Such undoubtedly should be the case from the accounting view point, as well as in law. The accountant recognizes no difference between things of the same value, for it is the money value of goods and of capital in which he deals.

Unfortunately, in practice, very different principles prevail. Not only is stock time and again issued for property, which in the mind of every one concerned is worth much less than par value of the stock with which it is

purchased, but the very terms of the sale give conclusive evidence to the general public that there has been gross overvaluation. The reason that this is so is that there is lacking any satisfactory criterion as to the real value of the property purchased with stock. Such purchases are frequently large plants, as, for instance, the manufacturing establishments bought by any of the "trusts." Including, as it may, land, buildings, machinery, raw materials, finished goods, mercantile credits, goodwill, perhaps also mines and quarries, railroads and steamers, and any other forms of assets, it is clearly impossible to form an authoritative estimate of the value of the plant. For such a complicated property there can, of course, be no publicly quoted price, nor can any reliance be placed on its cost to the vendor, for he may have acquired it either at an exorbitant price, or at a bargain sale far below its real value. The courts, therefore, are inclined to be liberal, and to leave the determination of value in all such cases to the discretion of the officers of the company. An illustration of the extent to which this deference to the directors' discretion may go is found in a decision of one of the Federal courts to the effect that the purchase by a corporation, for $200,000 bonds and $3,600,000 stock, of a railroad bed, the construction of which cost $2,000 and for which the vendor had paid $15,000, was not, on the face, a fraudulent transaction. (Stewart *v.* St. Louis, etc., R. R. 41 Fed. Rep. 736 (1887).)

But the accounting point of view is not necessarily the same as the legal. The fact that the court cannot determine the real value of the purchased property, has nothing to say as to how the accountant, knowing the value, should enter it in the books and exhibit it in the Balance Sheet. Yet the accountant is greatly influenced by the attitude of the courts on these matters, and it is necessary to consider some of the rules which the courts have laid down.

Where the purchased property is worth the par value of the stock there is no difficulty whatever. The exchange of stock for an equal value of any kind of property, is, to the accountant, no whit different in principle from the purchase of merchandise by means of a promissory note. Where, however, the property is worth less than the par value of the stock with which it is purchased, the courts have attempted to discriminate between cases where the property is not even worth the supposed market value of the stock, and those where it equals the market though still below the par value. While the issue of stock at less than its market value has been condemned, the courts have justified, especially in an emergency, the issuing of stock below par when it was shown to have been issued at its full market value. This is consistent with the decision quoted above, that in emergency even stock issued for cash may be placed at less than its face value. Evidently it is much more difficult to interfere with the issue of stock for property, with all the difficulties of appraising the property, than when it is issued for cash, which makes any discount manifest. It is furthermore argued by the courts that no one has been injured, and that, oftentimes, if par were required, it would be impossible to issue the stock at all, since no one would be willing to take it on that basis.

The latter argument, however, involves an economic fallacy, for it assumes that the only way in which an embarrassed corporation can acquire, say, $10,000 worth of property is by issuing stock of a greater par value. This assumption is unfounded in logic or experience, save as reliance is placed on the meager experience of American corporations in recent years. To illustrate, there may be taken the case of a corporation with $60,000 capital stock and earning $3,000 yearly. Considering the nature of the business this profit may be insufficient, and the stock may sell below par. But the directors see that by acquiring

certain additional property, worth only $30,000 the net profits may be raised to $6,000. But the owner of the property is unwilling to sell his property for $30,000 of the stock of the company. Is there, therefore, no other way to acquire the property than by increasing the amount of the capital stock to be issued, making it $40,000? This is the position taken by the courts. But the owner's unwillingness to take $30,000 stock for his property, is due to the fact that this would entitle him merely to a $\frac{3}{4}$ interest in the earnings of the company, and the prospect of getting $2,000 is not sufficient to induce him to take the risk. The reason why he would sell the property for $40,000 stock is that such a deal would give him a right to $\frac{4}{10}$ of the earnings, and a chance of receiving $2,400 is a sufficient inducement to him. But it does not therefore follow that the company need issue $40,000 stock for the property worth only $30,000. Two other methods of securing the end are open to the company. The stockholders might agree to contribute $\frac{4}{10}$ of their holdings and to give this $24,000 of stock in purchase of the property, which should be a satisfactory inducement to the vendor, as that would give him exactly the same relative rights as though he had received a new issue of $40,000. Or if that were not possible, a simpler method is open of issuing new Preferred Stock of $30,000 bearing cumulative dividends of say, 8 per cent. This again would bring the same returns to the holder as would $40,000 new Common Stock. It might even be issued with a smaller preferred dividend, possibly $7\frac{1}{2}$ per cent., as the greater security would allow some reduction in the returns. Thus it is quite easy to issue stock in such a form as to make a smaller amount equally as attractive as an excessive amount of a less favored issue. Nor is this a method which is merely theoretically possible. It is currently followed in Germany where the issue of stock in excessive amounts is rendered

difficult by legal prescriptions, but where corporations do occasionally become embarrassed and need to obtain funds on unfavorable terms. The provisions of Massachusetts law looking toward the issue of " special-preferred " stock are of similar purport.

But aside from the faulty economic assumption implied in the legal doctrine here discussed, the accountant objects seriously to the theory that to the corporation itself the new stock can have a value below par. Stock perhaps should not be said to have a " nominal " value, but to have a par value, of $100. That is to say that the value of the stock should be *equal* to 100 cents on the dollar. The Balance Sheet should show the real condition, and with certain technical forms understood, the statement that a company has $100,000 Capital Stock should mean, and mean only, that it has $100,000 net assets. To speak of a corporation issuing stock at its market value, but at less than par should be considered self-contradictory. The expression " Capital Stock " means Proprietorship of the amount stated, and to say that the receipt of less assets is still payment in full is surely misleading.

Indeed this peculiar doctrine of distinguishing between the real value and the par value of newly issued stock is criticised even from the legal point of view, as, for instance, the " Cyclopedia of Law and Procedure " states that the Supreme Court of the United States, in sanctioning the gratuitous issue of stock because it " was without value " refused to " follow the decisions of the highest courts in the states construing their own statutes," and that the opinion in Handley *v.* Stutz, already cited, " is a departure from the general current of authority as it stood at the time."

Fortunately there is evidence of a tendency toward greater strictness both in legislation and in court decisions. Especially in New Jersey, which has had a perhaps un-

merited reputation for looseness in corporation finance, has there been a clear enunciation of the correct principles both in the pages of the statutes and in the interpretation of the judges. A series of the decisions of the highest court of that state illustrates this. In Wetherbee *v.* Baker it was said that " the courts have inflexibly enforced the rule that payment of stock subscriptions is good as against creditors only where payment has been made in money, or in what may fairly be considered as money's worth " (35 N. J. Eq. 513 (1882)). Ten years later it held that: " to justify a corporation in issuing stock under our act for property purchased there should be an approximation at least in true value of the thing purchased to the amount of the stock which it is supposed it represents." (Edgerton *v.* Electric Improvement, etc., Co., 50 N. J. Eq. 361). Again, after nearly a decade, it was held in Donald *v.* American Smelting and Refining Company, that where the overissue is based on a false estimate on the part of the directors, " their honest judgment, if reached without due examination into the elements of value, or if based in part upon an estimate of matters which really are not property, or if plainly warped by self-interest may lead to a violation of this statutory rule as surely as would corrupt motive " (48 Atl. Rep. 772 (1901)). And in See *v.* Heppenheimer it was stated that " although this practice [issuing stock in excess] has been frequently indulged in and has brought obloquy upon our state and its legislation . . . such practice is entirely unwarranted by anything either in our statutes or in the decisions of our courts; and whenever it has been indulged in it has involved a clear infringement of, if not a fraud upon the plain letter and spirit of our legislation." In England, too, there is the recent very interesting dictum of Vaughan Williams L. J. " I hope that the day may come when it will be gravely considered by the legislature

whether it is not for the advantage of the community that an act should be passed that in all cases the full nominal value of the shares shall be paid in cash and nothing else." (Moseley *v.* Koffyfontein Mines, Lim. [1904] 2 Ch. 117.)

To the accountant, however, the problem is simpler than to the jurist. Two facts, one economic or financial, the other legal, he needs to know, and knowing these the method of entering the transactions is already determined. The first is, How much was actually paid for the stock? If less than par that difference must appear in his accounts. The equivalence of Goods to Proprietorship must be maintained, and where there is an admitted divergence between par and issue price, it can only be maintained by the interposition of a correcting item. Thus if Property received (P) is less than the Capital Stock (C) the Balance Sheet may not properly show $P = C$. There must be a formula $P = C - D$ which can be expressed with equal truth in the form $P + D = C$. The legal fact, as to whether the unpaid difference is a sum which can be collected, if need be, from the shareholders, is of less significance to the accountant, and, indeed, may, with some show of justification be left undecided by him. If collectible it is an asset and may appear as such in the Balance Sheet. If not an enforcible claim, and that is the turning point in all the decisions cited in this chapter, it is in the nature of a discount, and its treatment is equally clear. Possibly the harassed accountant may be excused from attempting to decide the legal question on which such varying opinions exist, and may show the discount without seeming to decide whether or not it is an asset, making an equivocal statement which is excused by the difficulty of the problem. In a word, wherever the property received is not fairly equivalent to the par of the stock the difference should be clearly shown in the accounts, and most clearly

is this done by simply listing it as Discount on Stock. This is identical with the method of treating the difference between the nominal value of a note given by the proprietor and the cash received therefor which, somewhere in the accounts, must be shown clearly as Discount.

To those at all familiar with corporation accounts it is clear that unfortunately the discount allowed on stock is seldom shown. This is generally because of unwillingness to show clearly the exact nature of a transaction which is of doubtful legitimacy. While the transaction itself is not altered by the method in which it is treated in the accounts, its legal status may be greatly improved by withholding from the accounts any evidence that the discount has been allowed. It is so difficult to determine accurately the value of any piece of property, that the courts hesitate to pass upon its equivalence to the stock issued therefor. If the accounts make a showing that full value has been received for the stock, the court may not attempt to disprove the statement. But the circumstance that a misleading statement hoodwinks the court, and thus allows the transaction to stand free from legal interference, by no means indicates that the failure to show discount on stock issued for less than its full face value is in accord with the correct principles of accounting.

In actual practice two subterfuges are resorted to. Assuming again a corporation acquiring a plant worth, all things included, $50,000 and issuing therefor $100,000 stock, instead of showing:

FORM 57.

Dr.	*Balance Sheet.*		*Cr.*
Plant	$50,000	Capital Stock	$100,000
Discount on Stock	50,000		
	$100,000		$100,000

the first method of concealing this status presents the following statement:

FORM 58.

Dr.	*Balance Sheet.*	*Cr.*
Plant..... $100,000	Capital Stock.....	$100,000

It is true that some writers on accounting justify such an entry. For instance, Keister, whose "Corporation Accounting" enjoys no little vogue, says in discussing a similar transaction: "There is no objection to the above entry. The machinery cost $30,000, but it is entered up at its nominal value of $60,000. It is not a speculative resource, therefore it matters not what value is placed upon it" (page 71).

To such a statement little direct argument can be made. Granting that the valuation of the fixed plant does not affect the Profit and Loss account and so has no immediate effect on dividends, certainly the creditor, the outside public, and even to no small extent the stockholders are interested in knowing the exact state of affairs.

The other subterfuge resorted to, and one which the same author says is proper, is to include a purely fictitious asset to make up the difference between the value of the plant and the amount of stock. Here the plant is correctly listed at $50,000, but there appears a new asset, *ex nihilo fit*, frequently called "Goodwill" or in Keister's terminology "Franchise."

As has been already shown there is no objection to including Goodwill or Franchise in the assets if such has been purchased. The discussion is here limited to the consideration of a case where the entire property, with all its rights and appurtenances, is confessedly worth only $50,000, and where the addition of the item Goodwill is clearly

a subterfuge. The insertion of a nonexistent Goodwill, which was the method used by the promoters of the Columbia Straw Paper Company, as well as the exaggeration of the value of existing assets—the method pursued, for instance, by the United States Shipbuilding Company—is entirely opposed to the fundamental principle of truthfulness in accounting.

An illustration will emphasize this obvious statement. Had the stock been issued to subscribers who contributed $50,000 gold, no one would for a moment justify a Balance Sheet which either multiplied the amount of gold received by two, or calmly added to its list of assets an utterly imaginary $50,000 in silver, in order to make the assets equal the nominal capital. But the " rule for the valuation of property is not different from that of money," and there is no reason for a different standard of integrity where stock is issued in one way from that required in another.

It is not argued here that equal exactness can be secured in the two cases. All that is discussed is the booking where the deficiency in value is recognized by those preparing the accounts. No plea is made for a fanciful or impossibly high degree of accuracy. It is only argued that conscious misstatement, which exists all too often in corporation finance, which, indeed, has been characteristic of American higher finance, is an outrage to the principles of accounting.

Justice to the reader, however, requires the statement that the standard here urged is not in accord with current custom, and is subject to one line of reasonable criticism. While it cannot be denied that the listing of an asset at an overvaluation is technically " untruthful " it may be claimed, with a good show of reason, that it is not necessarily misleading. It may even be urged that " truthfulness " can never be obtained by any system of valuation

of such a property as a manufacturing plant, and that any attempt to make a valuation is more likely to be misleading than is the bare statement that it cost, not so much money, but so much Capital Stock. This leaves the creditor or investor to guide himself, so that, if he goes astray, it is due to his own wandering and not to his being misled. There is much force in this argument which, indeed, is not altogether contradictory to what has been stated in these pages. Such a scheme of valuation is even approved by Mr. A. Lowes Dickinson[1] to oppose whose opinion on accounting matters, the layman must, indeed, be daring. On this principle all property purchased by stock is listed at the par value of that stock, but with an explanatory statement, clearly shown in the Balance Sheet, that the assets thus listed were obtained, not for cash but in exchange for stock. This principle is furthermore embodied in the present Massachusetts Business Corporation Act and in the English Companies Acts.

But despite the high authority opposed to the views set forth in this treatise, the claim is still made that to reject the standard of attempted accuracy is a confession of impotence, which, while it exhibits a commendable modesty on the part of professional accountants, seems, to the layman, to do scant justice to the ability of that profession.

It is interesting to see how this problem in accounting bears on the much discussed question of stock watering. The view generally expressed is that "stock watering"—a term vague and as yet ill-defined—is in itself a fraud upon investors and a crime against the public. From the view point of accounting the misdeed is more definitely

[1] "If stocks or bonds are issued for the purchase of any definite property, it may be presumed that the property is worth the par value thereof." Proceedings of the International Congress of Public Accountants. 1904, p. 185.

located. The amount of stock issued is relatively unimportant. Such a transaction, as Vice-Chancellor Pitney has said: "Does not at all or in any manner increase its intrinsic or practical value or in the least degree promote the real prosperity of the enterprise. . . . Its rental value will be practically the same. . . . The division of profits . . . among the stockholders will be on the same basis, and the amount received by each stockholder will be the same . . . and the market values will finally settle down to the gauge of the dividends earned and declared." (61 Atl. 850.) The issue of excessive stock may be bad business policy, indeed T. L. Greene takes the ground that in the future it will come to be recognized as such, but the watering of the stock, in itself, aside from accompanying complications is the merest peccadillo. The wrong consists in the "prevarication," the positive misstatement, that among the assets is a plant worth $100,000 when everyone concerned in the transactions knows it is worth only $50,000, or the untruth that the company has acquired Goodwill worth $50,000 when it is absolutely innocent of any such possession. If the other accounts in the Balance Sheet are correct little concern need be felt over stock watering. Its evil will be slight, its correction automatic. The onus of stock watering is that it leads to a misstatement of the value of assets and the rigid insistence on absolute integrity in accounts, both prevents and cures any harm from large issues of stock. It must not then be granted for a moment that it "makes no difference" at what figure a given asset, speculative or otherwise is listed. It makes all the difference in the world, the difference between truth and falsehood.

The principles of accounting throw light also on the question of stock dividends. Assuming the following:

FORM 59.

Dr.	*Balance Sheet.*		*Cr.*
Plant, etc.	$85,000	Capital Stock	$100,000
Merchandise	12,000	Undivided profits	15,000
Treasury Stock	10,000		
Cash	8,000		
	$115,000		$115,000

the company has accumulated profits of $15,000 and is in position to pay a five per cent. dividend. If this is paid in cash the balance sheet becomes:

FORM 60.

Dr.	*Balance Sheet.*		*Cr.*
Plant, etc.	$85,000	Capital Stock	$100,000
Merchandise	12,000	Undivided profits	10,000
Treasury Stock	10,000		
Cash	3,000		
	$110,000		$110,000

If the directors, however, think it unwise to distribute so much of the cash on hand, they may declare a dividend payable, not in cash, but in stock, as indeed they might declare one payable in merchandise. If a stock dividend is declared and paid there results the following:

FORM 61.

Dr.	*Balance Sheet.*		*Cr.*
Plant, etc.	$85,000	Capital Stock	$100,000
Merchandise	12,000	Undivided profits	10,000
Treasury Stock	5,000		
Cash	8,000		
	$110,000		$110,000

Not at all different in principle is it where there is no stock in the treasury, for if the condition had been:

FORM 62.

Dr.	*Balance Sheet.*		*Cr.*
Plant, etc.	$85,000	Capital Stock	$100,000
Merchandise	12,000	Undivided profits	15,000
Cash	18,000		
	$115,000		$115,000

new stock could have been issued (provided the company had power to increase its capital stock) with which to pay the dividend. In the latter case the final Balance Sheet would show:

FORM 63.

Dr.	*Balance Sheet.*		*Cr.*
Plant, etc.	$85,000	Capital Stock	$105,000
Merchandise	12,000	Undivided profits	10,000
Cash	18,000		
	$115,000		$115,000

The only difference in the two cases is that in one stock already held in the treasury is decreased, in the other Capital Stock outstanding is increased.

However objectionable such a transaction may be considered in its effect on the public, or however much it may be prohibited by particular statutes of individual states, it is, to the accountant a perfectly simple and, indeed, from his view point a perfectly legitimate transaction. New stock is indeed issued without the receipt of additional wealth, but the wealth has previously been received by the corporation, as is shown by the credit to Undivided Profits. The cancelation of $5,000 undivided profits

against $5,000 stock is a full payment therefor, so far as accounting is concerned.

This is clearly brought out in Williams *v.* Western Union Telegraph Company, where the point at issue was whether a stock dividend was legitimate when the company had a large accumulated surplus. The court said:

"We know of no law that is violated and no public policy that is invaded by issuing to the stockholders stock to represent that amount of property rather than in any mode to divide it up and distribute it among them. If it can issue stock in payment of property to be obtained by it as part of its capital for its legitimate uses, why may it not issue stock in payment for property in effect purchased of them and added to its permanent capital and which they relinquish the right to have divided? So long as every dollar of stock issued by a corporation is represented by a dollar of property, no harm can result to individuals or the public from distributing the stock to the stockholders." (93 N. Y. 190.)

The difficulty which the accountant cannot overcome is when he is asked to book a stock dividend where no profits have been earned, a transaction which unfortunately sometimes occurs. Had the Balance Sheet given above showed no Undivided Profits, the payment of a dividend of any sort, whether in stock, or cash, would be equally objectionable, for a dividend implies profits to be divided. Were either cash or stock to be distributed as a dividend, in the absence of accumulated profits, a correct accounting would require the showing of a deficit due to the payment of the dividend. But this, showing at once the illegality of the dividend, is not satisfactory to the directors guilty of such action. The only way to hide the unlawful act is to introduce into the accounts some fictitious asset, creating thereby a correspondingly unreal profit, which, once created, can in turn be canceled against

either cash or stock paid out in dividends. It is to be noted, however, that the wrong accounting here consists in the preliminary creation of fictitious profits, by falsely marking up the value of the assets, and not in the stock dividend as such. A dividend, whether in cash, merchandise, real estate, or stock is, in the absence of statutory prohibition, legitimate whenever real profits exist, and only when they so exist. But such profits failing, a cash dividend is just as objectionable as one in stock; in fact it is more so, as the paying out of cash may damage existing creditors, the issuing of stock cannot.

A transaction, unusual in character but not infrequently occurring, is where some of the outstanding stock is donated to the company by its original holders. The stock thus received is ordinarily sold for the purpose of raising cash for the use of the company, the selling price generally being below par, as the stock, having previously been issued as full paid stock, carries with it no liability to subsequent purchasers at a lower price.

Thus, to cite as illustration an actual case, a company gave its entire capital stock, $300,000 in purchase of property, the vendors agreeing to donate $40,000 of the stock to the company. Assuming that the property purchased was actually worth $300,000—in this particular case a false supposition—the accounts should show:

FORM 64.

Dr.	*Balance Sheet.*	*Cr.*
Property	$300,000	Capital Stock	$300,000
Treasury Stock	40,000	Surplus from donated stock	40,000
	$340,000		$340,000

The company was then in a position to sell its stock at the market price and thus raise money for working capital.

If sold at less than par the discount could be charged against the surplus, the balance of which should show the actual amount received when the stock is all sold.

The donation of wealth is so unusual a business transaction that by some critics it is always considered tainted. But it is at least conceivable that it may be perfectly legitimate. Granting that the property is really worth $300,000, it may nevertheless be difficult to persuade outside capitalists of that fact, and the organizers of the corporation have no ready money with which to exploit the property. In order to secure the success of the enterprise the vendors, confident of the ultimate success, may be willing to make the sacrifice in order to get it started, just as an inventor may sell a half interest in a patent at a price which he is perfectly confident is far below the capitalized value of the anticipated earnings.

While it is possible then to conceive of such a transaction as being just what it pretends to be, it is perhaps not extravagant to claim with Schuster that "generous benefactors, who give away their savings to trading companies are freaks of nature who need not trouble the legislator's [or the accountant's] mind." In many cases, probably in the great majority of cases, the transaction thus described is the barest subterfuge to enable the company to sell its stock below par free from liability. In the case cited the vendors were really selling their property for $260,000 in stock, and the company was placing $40,000 of its stock on the market to raise working capital. But to have sold such stock below par would have involved obligation on the part of the purchaser to make up the difference, and so there was a resort to a subterfuge both stupid and palpable. Here again the error from the accounting view goes back to the first entry, namely, the statement that the property acquired was worth $300,000, when in fact it was clearly worth not over $260,000. Like

all other cases of overissue of stock the culpable element, at least from the accountant's view point, is in the misstatement of facts regarding the valuation of the assets acquired. That being correctly given no real problem can arise. For if the Balance Sheet had correctly shown the status as follows:

FORM 65.

Dr.	*Balance Sheet.*	*Cr.*
Property $260,000	Capital Stock $300,000	
Discount on Stock 40,000		
$300,000		$300,000

even though the discount were treated as something which could not be collected, there need be no misleading of the public and the donation of the stock could not hide the fact of the discount on the later sale.

By some rigid accountants, among whom are Seymour Walton and most German writers, the donation of part of the stock by vendors is to be construed inevitably as a deduction to be made from the nominal purchase price of the property. But no such severe standard has been set by the courts. It is true that in an earlier New York case it was held that such a contribution was at least corroborative evidence of overvaluation (Douglass *v.* Ireland, 73, N. Y. 100. (1898)). But the more recent English case of Innes & Company ([1903] 2 Ch. 254) takes a different view; and the Colorado case of Speer *v.* Bordeleau (79 Pac. 332. (1905)) distinctly states that such a transaction is not evidence of issue below par. But whether the presumption is in favor of valuing the property at the amount of stock originally given the vendors, or at the net amount retained by them, if it is established that the former figure would be an actual overvaluation, there is no

excuse for such an incorrect representation in the accounts. The accountant should transcend the limitations under which the courts labor.

The donation of stock has a further purpose, one which might be otherwise obtained, of providing a fund which can be used in covering the organization expenses, or those which may be incurred during the early years of the corporation. The securing of such a fund is a perfectly legitimate, indeed a praiseworthy, procedure. The contribution of stock is no more unreasonable, and has exactly the same effect as the sale of the stock at a premium for the same purpose of providing a fund for initial expenses. As these are incurred they can be charged against the Surplus, which thus gradually disappears. The process is identical whether the Surplus is raised by the contribution of stock, or by the practical contribution of cash under the name of premium on stock.

Some question may be raised as to the nomenclature used in the transaction just discussed. In the Balance Sheet in Form 64 a descriptive title " Surplus from donated stock " is used, and that is incontrovertibly correct, although it may well be that a less cumbrous term would serve in its place. Some writers have employed the term " Working Capital " for the credit item. This innovation is of doubtful propriety, for " Working Capital " has long had a specific meaning as a collective term for what are often called " quick assets," e. g., cash, accounts receivable, perhaps merchandise, etc. The new use of the term has some vogue in America, but it is not found in England, nor does it conform to the use of the term in legal definitions, nor even to the more established and better recognized accounting practice in this country.

The most important stock transactions of recent years have been those of the so-called trusts, where the stock of the new company is issued largely to acquire the busi-

ness and plants of established competing firms or corporations. There are two forms in which this may be done, omitting the case where the stock is issued to purchasers for cash and the subsidiary plants purchased with the funds thus received. The stock of the consolidating company may either be given to the stockholders of the old company as individuals, in exchange for their holdings; or the new stock may be used to purchase the plants, goodwill, etc., from the subordinate companies. In extreme and simple form this may be illustrated by the case of Corporation A organized with $1,500,000 capital stock which is used to make a combination of Corporations B and C, whose Balance Sheets are respectively:

FORM 66.

Dr.	*Balance Sheet of B.*		*Cr.*
Plant and other assets...	$600,000	Capital Stock.....	$300,000
		Surplus.....	300,000
	$600,000		$600,000

FORM 67.

Dr.	*Balance Sheet of C.*		*Cr.*
Plant and other assets...	$300,000	Capital Stock.....	$300,000

The agreement made is that three shares of stock of Corporation A shall be given in exchange for each share of stock in B, that $400,000 stock shall be given for the plant, goodwill and other assets of C, and that the remaining stock of A is to be issued to subscribers for cash at par.

Assuming that the bargain is an equitable one all

around, the Balance Sheets of the three corporations, after the transactions, will be:

FORM 68.

Dr.	*Balance Sheet of A.*	*Cr.*
Stock of Corporation B 3,000 shares at $300	$900,000	Capital Stock $1,500,000
Plant, etc	300,000	
Goodwill at cost	100,000	
Cash	200,000	
	$1,500,000	$1,500,000

FORM 69.

Dr.	*Balance Sheet of B.*	*Cr.*
Plant and other assets	$600,000	Capital Stock $300,000
		Surplus 300,000
	$600,000	$600,000

FORM 70.

Dr.	*Balance Sheet of C.*	*Cr.*
Stock of Company A 4,000 shares at $100	$400,000	Capital Stock $300,000
		Surplus 100,000
	$400,000	$400,000

The Balance Sheet of B is of course unchanged as the transaction was between A and the individual stockholders. The Balance Sheet of C shows stock of A held as its only asset. Remembering the assumption made above that the consolidation is equitable, which implies that full par value is given and received, C must show a Surplus (Profit) of $100,000. A shows the stock of B bought of the shareholders, but not the assets of B which still belong to that corporation, the only change being a shifting in the per-

sonnel of the stockholders. But it shows not only the former assets of C, but also the Goodwill which it bought from C, which was not included in the assets of C, but which is legitimately included in those of A.

It is furthermore clear that the stock of A might have been issued at a premium, and that any possible variations in terms and prices could occur without affecting the principles elucidated in this most simple illustration. As to the legality of the combination under statute law the present discussion is not concerned, but providing a consolidation takes place in the manner specified, the accounting should be as above.

It may be that the holding corporation prefers to show in its Balance Sheet not the stock of B but the detailed assets, a plan in part adopted by the United States Steel Corporation. While such a showing is desirable for certain purposes, formally and legally A does not own the assets of B so long as B retains its legal corporate existence. If the merger works a dissolution of B the case is otherwise.

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CHAPTER X

LIABILITIES

As was shown in Chapter III the credit side of the Balance Sheet is frequently headed "Capital and Liabilities." This is a comprehensive title, for in the approved form of the Balance Sheet the mere valuation accounts —such as Depreciation Account—being subtracted from the nominal assets there remains on the credit side only Capital—including all unrepresented capital, such as Surplus, Reserves, and Undivided Profits—and the outside liabilities of the concern. In a limited sense, it is true, liabilities are also a subtrahend from the assets, for a debt, as shown in Chapter I, is really a negative asset. But to show only the net excess of assets over liabilities, or of some one asset over the particular liability which it secures (as, for instance, to show only the equity in a piece of real estate, instead of showing both the value of the property and the mortgage on it) is universally recognized as incorrect and misleading. An exception is found in the Double-Account Balance Sheets used by certain English companies. There, in the Balance Sheet proper is shown only the excess of assets over the sum of capital and funded debt. But this exception is formal rather than real, for the accompanying Capital Account clearly exhibits the full status. The same principle is applied occasionally in American accounting, as, for instance, in a modified form, in the Balance Sheet of the Atchison, Topeka, and Santa Fe Railway Company. Somewhat similarly the Illinois Central shows in the Bal-

ance Sheet only the excess of the current assets over the current liabilities. But there is a reference given to a detailed exhibit on another page where the full information is to be found.

Rehm goes further and suggests that the proper form of a Balance Sheet, from the economic view point, is one in which negative items are shown as subtractions, practically as follows:

FORM 71.

Assets.	*Balance Sheet.*	*Liabilities.*	
Plant, etc.....	$610,000	Capital Liabilities:	
Other assets..	50,000	Capital Stock.....	$600,000
	$660,000	Reserve Funds.....	10,000
Less Debts.....	40,000		610,000
		Profits:	
		Excess of income.....	$12,000
		Depreciation..	2,000
			10,000
	$620,000		$620,000

While from a theoretical point of view debts are negative assets, and differ radically from capital, it is well-nigh universal to list both capital and liabilities on the same side of the Balance Sheet, and no criticism is ordinarily made of this practice. All that is necessary is clearly to differentiate the two, and to be sure that there is no understatement of the amount of liabilities.

The accounting problems having to do with liabilities are extremely simple as compared with those relating to assets. This is principally due to the fact that the question of valuation, so perplexing in regard to assets, practically disappears when liabilities are concerned. One may suffer, indeed one must expect, some diminishment in the value of assets but debts, so long as the principle

of the going concern is recognized, must be shown at their full amount. The only problems which arise in the booking of liabilities are those which group around the classification of liabilities, the calculation of interest, the treatment of unissued, repurchased, and canceled debts, and a few questions in which there may arise a doubt whether there is an existing liability or not. These will be considered in order.

The clearness and consequent value of the Balance Sheet is increased if some classification is made of the various kinds of debt. Thus a showing of the funded or long time debt separate from the short time or floating debt is of great importance, indicating, as it does, the immediate financial strength of the concern, and whether or not it is likely to suffer loss because subject to a sudden demand from its creditors. The distinction between debts for which notes or acceptances have been given and open book accounts is also important. The extent to which such classification is to be carried, as in the corresponding classification of assets, is a matter of discretion, governed by individual circumstances. The statements rendered by the National Banks to the Comptroller five times yearly contain seven different subdivisions of liabilities to depositors. One of these same banks will give, in the condensed Balance Sheet published for advertising purposes, only the single item Deposits. Both of these statements are correct; each, for its purpose, is full as well as fair. But whatever subdivisions are made, the classification adopted must be strictly observed. It may be perfectly correct to include all liabilities to depositors under the one head "Due to depositors." But where a subdivision is made it is incorrect and fraudulent to list under the title "Accounts payable" items which really are "Bills payable" or to include either of these items under the title "Funded Debt."

The questions which relate to the calculation of inter-

est on debts are the most interesting which arise in regard to the accounting of liabilities. As a matter of convenience debts, whether receivable or payable, are ordinarily listed in books at their par value rather than at their face value. Where the note is discounted, it follows that there must be a counter entry to a Discount account. Where the note, or other obligation is not discounted, but bears interest from date, the adjustment is not made until some later date. When a formal Balance Sheet is prepared it is accordingly necessary, in order to make a correct showing of the liabilities of the concern, to make an exact reckoning of interest on outstanding liabilities. This is exhibited in the Balance Sheet, either as a liability "Interest accrued," which for convenience may be added to the face of the debt, or, in case the note was discounted in advance, as a deferred asset, perhaps under the title "Discount paid in advance."

Such an estimate is very simply made in case of short time obligations. When bonds are emitted the calculation is more complicated, and the treatment in the accounts is not uniform. The estimation of simple interest accrued on the bonds since the time the last interest payment was made is of course identical with the calculation of interest on a short note, and no divergence of practice occurs in that regard. The main point of difficulty is in regard to the premium or discount allowed on the bonds at the time of issue. As shown in discussing investments, the premium paid on a bond is virtually the price paid for the privilege of receiving nominal interest at a rate higher than the market rate. Viewing the transaction from the borrower's point of view, the premium received is, therefore, a lump payment made in return for the obligation to pay an excessive rate of interest during the life of the bond. If the credit of the company and the conditions of the market would have enabled the company to issue

a five per cent. twenty-year bond at par, its six per cent. bond, running the same time, should sell at approximately 112.46. This premium of 12.46 is, therefore, the present value of the annuity of one per cent. which the company must pay for twenty years. But the interest installments as paid are normally and properly charged as an expense, and consequently the 12.46 per cent. should be spread over all the years during which the interest is thus paid, in order properly to equalize the profits of the several years. The correct entry, therefore, is to credit the premium received to " Premium on bonds issued " a part of which is annually written off to offset the interest paid the bond holders. It might, however, all be placed in some Reserve, and this is not infrequently done. This, while theoretically incorrect, is condoned by many authorities on the ground that it leans to conservatism. The opposite treatment of crediting the premium at once to Profit and Loss is manifestly incorrect, for the premium is in no sense profit and least of all profit of the single year in which it is received. The apportionment of premium between the years is most scientifically done on the basis of the declining value of the annuity which it represents, according to the method described in discussing the valuation of investments.

Exactly the same principle applies to bonds issued at a discount, just as the same principle applies to bonds bought below par. The discount should appear at first among the assets, but should gradually be written off as the years pass, thus making the annual charge to interest correspond to the real rather than the nominal rate paid. This practice is frequently met with as, for instance, in the accounts of the Lackawanna Steel Company, and the Chicago and Alton Railway. At times the annual charge is based on the actuarial estimate of the value of the annuity, at times merely divided into equal annual charges,

at times, still less scientifically, but even more conservatively charged off much more rapidly, or even all charged off to expense in the first year.

Among American Railways, however, the custom is to charge discount on bonds to the construction account. The temptation to do this is great, as in the early years of a railroad's life the burdening of the income account with any additional charges is, of course, unpleasant. But curiously enough this practice is justified by many writers, among whom may be mentioned T. L. Greene and Rehm. Greene makes the statement absolutely, as applying to all discount on bonds issued. Rehm more cautiously applies it only to the discount on bonds whose nominal rate is equal to the current market rate, or to that part of the discount which represents a rate higher than the market. The argument in favor of this is that the discount represents, at least in so far as it makes the actual rate paid higher than the current market rate, an additional cost of the road, a cost due to the lack of credit. Thus if five per cent. is deemed the normal rate, the discount on a four per cent. bond necessary to make it net five per cent. represents interest; but discount on a five per cent. bond, or discount on the four per cent. bond in excess of 12.46, represents not interest, but the cost due to poor credit.

But such a differentiation is extremely difficult to apply. All that one can confidently assert, in the case assumed, is that the market rate for a twenty-year bond of this particular company is five per cent., while the nominal rate was made four per cent. Furthermore, the charging of discount to construction results in the absurdity of making the road cost more the longer the bonds have to run. In the case mentioned for each million dollars received from bonds and expended on construction there would need to be added some $140,000 for discount, but had similar bonds running fifty years been issued, for each

million thus provided there must be added approximately $220,000.

To be consistent, those who argue that discount due to deficient credit is part of the cost of construction should go further and increase the cost annually whenever the company pays more than the normal rate. The company whose poor credit forces it to pay 11.47 per cent. discount on a five per cent. bond, could have sold a six per cent. bond at par. But this would necessitate an annual payment of one per cent. additional interest above the normal market rate. Why should not this annual payment be charged to cost of construction if the equivalent and alternative payment of 11.47 per cent. once for all is thus to be charged? Yet no one of those writers who attempt to differentiate between discount due to a subnormal nominal rate, and discount due to deficient credit, advocates such a practice. The Interstate Commerce Commission attempts the difficult distinction between discount on securities and commissions on their sale. The former is held not to be properly included in the cost of property, the latter may be.

Occasionally bonds are issued repayable at a premium. Where such repayment is optional on the part of the borrower the provision for the premium is in the nature of a special reserve. If, however, the repayment at the premium is accepted as part of the financial policy of the concern, the premium as well as the par value of the bonds becomes an obligation and should appear in the Balance Sheet. The two elements may, however, be kept separate. Where bonds thus redeemable at a premium are sold at a price other than the redemption figure, the difference between the two should be treated just as premium or discount on bonds redeemable at par are treated.

The treatment of bonds authorized but not yet issued is not different in principle from that of unissued stock,

already discussed. Any one of the alternative forms given on page 148 may be applied to such bonds. But, as in the case of stock, if the unissued bonds appear in the Balance Sheet among the assets, the nature of such holdings must be clearly shown. It is illegitimate to include them with outside investments under a general heading, "Investments," or "Bonds and Stocks." Where the unissued bonds are secured by a lien on specific property there is additional justification in including them among the assets rather than in merely deducting them from the outstanding debts. The property pledged to secure the bonds gives them a somewhat independent value, and makes them perhaps an available asset even in the case where the company is in a poor financial condition.

Furthermore, bonds, unlike stock, may, in the absence of special legislation, be freely issued below par. Hence it is not important to distinguish in the case of bonds, as it is in the case of stock, between those which are unissued and those which have been reacquired.

But in any case the most complete and hence the most satisfactory way of presenting all the facts is to exhibit the unissued bonds on both sides of the Balance Sheet. This treatment is found, for instance, in the Balance Sheets of the Chicago and Northwestern Railway, and may be simply illustrated as follows:

FORM 72.

Dr.	*Balance Sheet.*	*Cr.*
Miscellaneous Assets	Bonded Debt	
Bonds of Company held in Treasury $50,000	Outstanding $100,000	
etc., etc.	Held in Treasury .. 50,000	
	etc., etc.	$150,000

The treatment of bonds purchased in the market is similar to that of stock thus purchased and held in the treas-

ury. The purchased bonds may, however, at any time be canceled and the outstanding debt thus reduced without any further formality, while the purchase of its own stock by a company does not in itself work a reduction of the nominal capital, to accomplish which certain legal procedures must be followed. A distinction should be made between a bond redeemed, especially where it is formally canceled, and one merely bought on the open market and held in the treasury as a live bond. Where the former takes place it must disappear entirely from the Balance Sheet.

The showing of contingent liabilities, that is of liabilities for which the proprietor may be held under certain contingencies but which he never expects to have to meet, is a perplexing problem. An illustration is where a manufacturer sells machinery with a guaranty. Ordinarily such an obligation to indemnify the purchaser in case the machinery fails to render proper service does not show in the books at all, and yet it may constitute an important fact in determining the financial status of the manufacturer. Probably the best way of treating such a transaction is by establishing a special reserve to provide against an uncertain contingency, rather than to treat it as an absolute liability. More simple is the case where acceptances or indorsements are given as an accommodation to trade associates. This, of course, constitutes a real liability and should at once appear on the books of the indorser, being offset by an asset representing the claim against the one who has been accommodated. Again funds may be raised by indorsing and rediscounting trade paper, in which case the obligation is not incurred as a mere accommodation but as a regular business transaction. Peculiarly enough, in ordinary bookkeeping, such obligations are customarily omitted. The discounting of the trade paper formerly held cancels that item from the books and noth-

ing further appears to indicate a possible obligation. This is in contrast to usage in transactions which at heart are identical, that is, where funds are obtained on the promisor's own note, secured by trade paper as collateral. Where this is done the custom is to show the trade paper still among the assets and the collateral note itself as a liability. But whether the funds are secured by indorsing the trade paper and rediscounting it, or by hypothecating it as collateral does not affect the real position of the borrower. Yet it is exceptional to exhibit the liability as indorser on rediscounts, the usage of National Banks being the most prominent example.

A dividend which has been declared becomes at once a liability of the company and must accordingly be shown in the Balance Sheet. This corresponds with the legal position, for while undivided profits are not a liability of the corporation, and the stockholders have no right to compel their distribution, the declared dividend is an obligation, for which, in case of bankruptcy, the stockholder has the same rights that any other creditor has against the company. Undeclared dividends do not appear at all on the books, unless in the case where there are cumulative preferred dividends in arrears. The position of such dividends is somewhat unique. So far as the company and the preferred stockholders are concerned there is no obligation to pay, indeed the company cannot pay unless profits are earned. But from the view point of the common, or deferred stockholder delinquent cumulative dividends on preferred stock are a liability which must be met before anything can be paid to him. Consequently there is a good argument for making an exhibit of the amount in arrears. Practice is, however, not uniform on this point. Perhaps the best treatment is to follow Pixley's suggestion that they appear in an appendix to the Balance Sheet rather than in that statement itself.

The provision for pensioning employees raises a question as to whether there exists a liability which should appear in the Balance Sheet. An agreement definitely made to pay pensions is nothing more than one way of paying wages. In order to apportion charges properly between years, the amount necessary to provide for future pensions must be counted among the expenses of each year; and the corresponding sum is a real obligation payable to employees some time in the future. Evidently in such a case to omit such a liability from the Balance Sheet is incorrect. But if the provision for the pensions is not a definite matter of bargain, but is rather an optional beneficence of the proprietors, the accumulated fund is of the nature of a reserve rather than a liability. In some cases, where the pension system is well established the annual appropriations thereto are paid to trustees who hold them, and the accumulations thereon, in trust for the beneficiaries. In such cases both the assets and the liability entry may properly be left entirely out of the accounts of the company. Here the payment of wages consists of two parts, one paid currently to the workman, the other paid to his trustees. After such payment the company need, in neither case, make further accounting. The treatment of pensions therefore depends on the exact legal nature of the pension agreement, and on the financial policy adopted in its administration.

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CHAPTER XI

PROFITS

THE Profit and Loss Account, called also Revenue, Income, Loss and Gain and other similar names, is a temporary, collective account, recording the changes in net wealth due to the business operations of a stated period. In some cases it indicates, as well, the disposition which has been made of the net profits. It is temporary, as it covers only a given period, usually the fiscal year, and is in the end closed out, in partnerships by being divided between the proprietors' accounts, in corporations by transference to Dividends, Reserve, Surplus, or other similar accounts. It is a collective account in that it embraces the balances shown by other subsidiary " Proprietorship " accounts, such as expense or the various subdivisions thereof, and the various accounts indicating profits received during the year, such as Merchandise, Interest, Rent. It shows changes in net wealth and is therefore subsidiary to the Capital, or other main proprietorship accounts. It shows not merely the net wealth as a single sum, nor the accretions of wealth during the entire previous business career, as distinct from the original capital, but as well, just what changes in the net wealth have been brought about during the fiscal year. It shows, properly, changes due to business operations, not those due to other causes, although here the line is uncertain and practice unsettled.

Like other accounts it contains two sides. On the one are entered items, of which Expense is the type, whose

effect, *per se*, is to indicate a diminution of net wealth. On the other side appear items which indicate an increase in net wealth. The debit side may, in addition, contain not merely expenses and losses, but also the disposition, or allocation of the net profits, which sometimes, as when it shows dividends paid, indicates a reduction of the net wealth belonging to the concern, but not a loss; and sometimes, as when a sum is carried to Surplus or Reserve, merely a technical bookkeeping transfer.

The purpose of the Profit and Loss account is, primarily, to show the net profits of the concern for the period, with special reference to the amount of net profits available for dividends. This may at times be derived from the Balance Sheet, indeed some writers, of whom Rehm is a prominent example, claim that the prime purpose of the ordinary Balance Sheet is to exhibit profits available for dividends. But in practice this is not true, and in any case the Profit and Loss account by its greater explicitness and completeness is a valuable adjunct to the Balance Sheet, so that the two statements are generally published together, as being mutually complementary.

If a distinction is to be made, it may be said that the Balance Sheet interests more particularly the creditor, the Profit and Loss account the proprietor or stockholder. The depositor in the bank finds in the former the comparison between deposits and cash reserves, the nature of investments, and the amount of guaranty, facts all of which affect his determination as to continuing his account. The wholesale merchant learns from the Balance Sheet of his customer the relation of assets to liabilities, and the kind of each, and decides as to increasing the line of credit. The stockholder, on the other hand, is interested more particularly in profits, and the examination of the Profit and Loss account should show him whether the stock is a desirable investment. But the distinction here made

is only relative. The creditor is unwilling to continue to trust a losing concern, and the investor will resist the temptation to buy stock with high dividends, if these are gained by doing a business with insufficient reserves and imminent liability to bankruptcy. So, creditor and proprietor alike need both Balance Sheet and Profit and Loss statement to give the information desired in business negotiations.

Before considering more particularly the details of the Profit and Loss account and the problems pertaining to it, it is necessary to show the connection between this account and the various classes of accounts which were discussed in the preceding chapters.

The Profit and Loss account being merely a subdivision of the Capital account and indicating current changes in the net wealth, it is evident that its connection with the Goods accounts is most vital. Any changes in the net value of the assets must, with certain exceptions to be noted later, be reflected in the Profit and Loss account. Consequently, any of the transactions previously discussed, or any of the bookkeeping estimates which more or less accurately portray transactions affecting the book value of the assets, must also be represented in the Profit and Loss account. Any change in the Goods accounts, representing business changes other than mere exchange transactions, must, in ordinary cases have a counter entry which is ultimately included in the items posted to the Profit and Loss account.

The problems of Profit and Loss are generally, then, not new questions but the same that have already been discussed. The valuation of assets (the problem of the inventory) is clearly a question as to Profit and Loss, for changes in the book value of assets mean corresponding changes in the net wealth. The question as to whether Organization Expenses should go into the inventory is clearly a ques-

tion as to whether they should be kept out of the Profit and Loss account. Depreciation, if established, must be booked by a charge to Profit and Loss. Thus the Profit and Loss account is merely another view of the general problems of accounting, and much which has already been discussed, while pertinent to the consideration of Profit and Loss need not be repeated in this chapter.

Most of the charges made to the Profit and Loss account are unequivocal and undisputed. An expense is, in most cases, easily recognized, and the necessity for charging expenses against Profit and Loss is generally not questioned. But there are two classes of cases in which a dilemma really arises as to whether a given item should appear in the Profit and Loss account or elsewhere. In the first class the alternative to entering it in the Profit and Loss account is to include it among the Goods listed in the inventory. In the second class the alternative is the entry in the Capital account direct, or where that is impossible because of the requirements of corporation law, the entry into some subsidiary account showing that a deduction should be made in the nominal capital, but one which need not go through the medium of the Profit and Loss account.

1. The first of these problems has been discussed in connection with the inventory. Is the interest paid during construction, is the expense of organization, a real loss, something to be debited against profits, or is the payment represented by an immaterial asset, or at least by a Deferred Charge, which for present purposes is to be considered as an asset? Was the money paid for improving the road-bed properly an expense, or is it an added element in the cost of construction and, as such, to appear among the assets? Assets and losses, expenses and improvements, exchange transactions and those affecting net wealth, are mutually exclusive conceptions. Determina-

tion that a disbursement was for one of these purposes excludes it from the other, so that all this class of questions is merely a restatement of the problem of the inventory already discussed.

2. The second alternative is, however, a new one. The alternative to an entry in the Profit and Loss account, is here an entry, not among the assets but in some other of the accounts which have here been called " Proprietorship " accounts. Exclusion from Profit and Loss does not here force an inclusion in the other group of accounts, representing assets. It means that an actual deduction in net wealth has taken place and that, if this is not to appear in the account showing current business changes in net wealth (the Profit and Loss account), it must appear in some other of the same group, either in the Capital account itself, or in some account, other than Profit and Loss, which is subsidiary to the Capital account. In a word, the question is whether all changes in net wealth should go through the Profit and Loss account. Can capital be lost, without having such a technical loss as must appear in the debit of the Profit and Loss account? May there be an increase in the net value of the assets, representing a growth of capital, but not profits in the sense that is meant by a Credit balance to the Profit and Loss account?

These two different classes of perplexing entries may be illustrated by referring again to the fundamental equation of bookkeeping in which the total Goods, consisting of plant and other assets, equal the total Proprietorship, divided into original capital and profits, i. e.

Plant, etc., \$100,000 + Cash \$5,000 = Capital \$95,000 + Profits \$10,000.

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road-bed. The dilemma consisted in the uncertainty whether, Cash being thus diminished, the validity of the equation is to be maintained by making an equivalent addition to the other term of the Goods account, or by subtraction from Profits. In one case there results

Plant, etc. \$101,000 + Cash \$4,000 = Capital \$95,000 + Profits \$10,000,

in the other

Plant, etc. \$100,000 + Cash \$4,000 = Capital \$95,000 + Profits \$9,000.

But in the second class of doubtful entries there is no question as to the lessening of total values. There has been a decline, say in the value of the plant, amounting to \$1,000. The problem here is virtually whether the Balance Sheet should show:

Plant, etc. \$99,000 + Cash \$5,000 = Capital \$95,000 + Profits \$9,000,

or whether the correct statement would be either:

Plant, etc. \$99,000 + Cash \$5,000 = Capital \$94,000 + Profits \$10,000,

or the equivalent expression:

Plant, etc. \$99,000 + Other assets \$5,000 + Losses \$1,000 = Capital \$95,000 + Profits \$10,000.

In practice, a still different and incorrect treatment is given to the transaction, which shows:

Plant, etc. \$100,000 + Other assets \$5,000 = Capital \$95,000 + Profits \$10,000,

despite the undeniable fact that certain values have really disappeared.

This problem has been discussed at length by the courts, but, unfortunately, not always from the view point

of accounting. It has perhaps been worked out most minutely in questions of probate, where a life interest in an estate is left to one person while the body of the estate goes to some other legatee. Here it is of vital importance to distinguish between the income going to the tenant for life and the body of the estate going to the remainder-man. In this relation the conception has been introduced of there being a growth or increase in the body of the estate which does not constitute a part of the income. Conversely there may be a loss of part of the principal without effect on the income derived from the remainder. The theory, while well worked out in detail in its application to the settlement of estates, is recognized as being peculiar to probate law, and while interesting to the accountant is not applicable to commercial accounts. Again the matter frequently comes up in bankruptcy proceedings, where the liability of directors, or of stockholders, to creditors turns on whether a certain dividend paid was really profit earned. In disputes arising between different classes of stockholders, or in the suits brought by the holders of income bonds, there has also frequently arisen the question as to what constitutes profits. But in most of these cases the decisions are not so conclusive as could be desired. Oftentimes the decision turns entirely on the construction of some special clause in the articles or by-laws of the company,[1] or after a long discussion of vital principles the case is finally decided on some technicality leaving the main question unsettled;[2] or in general, the

[1] For instance the oft-quoted decision in Davison *v.* Gillies was subsequently said to have rested entirely on special articles and not on general law. *Vide* L. R. 41 Ch. Div. 18.

[2] For instance the decision on the appeal of the National Bank of Wales case. Here most important principles were raised in the Court of Appeal, but these were questioned but not reversed in the House of Lords, the decision being made on a technicality as to the defendant's responsibility. Dovey *v.* Cory [1901] A. C. 477.

decision is at best a decision as to what profits are available for dividends, rather than as to what constitutes profits.

In England the discussion has been clearer than in the United States. It has been especially favored by the exceptional form for the Balance Sheet provided for parliamentary companies. The fact that the Capital account is here kept separate, as in the simple form

FORM 73.

Dr.	*Capital Account.*	*Cr.*
Capital assets.....	£95,000	Shares..... £100,000
Balance.....	5,000	
	£100,000	£100,000

Dr.	*Balance Sheet.*	*Cr.*
Balance of Capital Account	£5,000	Bills receivable..... £15,000
Accounts payable.....	20,000	Cash..... 15,000
Profits.....	5,000	
	£30,000	£30,000

seems to encourage the idea that the Capital account, or at least the plant purchased with receipts from capital have little or nothing to do with the profits exhibited in the Balance Sheet. The inference is easily drawn that there can be a loss in the value of the capital assets which would affect only the Capital account and which would leave the profits of the year undisturbed. Doubtless, because of being accustomed in double accounts to treat capital as a thing by itself, the English courts have been more ready to take advanced ground on the general problem.

Whatever decision may ultimately be rendered by accountants, the problem at least is clear. Recognizing the loss of certain assets, say by fire, or by shipwreck, by

default of securities, or by normal exploitation, the only point of debate is as to the channel through which that loss shall be shown. In accounting terms it is simply whether a given, recognized loss is to be debited to Profit and Loss or to some other account which would indicate a deduction from net wealth, but which would say nothing about current revenues. To a certain extent it is a question of terminology, in part, it is a question of law. Does the term " Net Profits " mean the net change in wealth, due to whatever cause, or does it mean the changes due only to a certain set of business factors? Does the law allow dividends to be made of the surplus of certain receipts (realized or constructive) over certain expenses (whether paid or merely recognized), or does it order that only the surplus of present assets over the net assets of a year ago may be divided?

The problem may be illustrated by assuming a case of relative simplicity where a company is organized to purchase a coal mine and to exploit and sell the coal. Waiving the question of the difficulty of making an intelligent estimate of the value of the coal deposit, it may be assumed that $250,000 is paid for the property and that this is an equitable price for the million tons of coal which the mine contains. On these terms the selling price should return the principal, pay all the operating expenses, and yield a fair profit on the original investment. The proceeds of each year's sales obviously should considerably exceed the annual cost of operating the mine; but it is perfectly clear that the excess of receipts over annual expenditures will not all be profits. Out of the price received for each ton of coal 25 cents is a return of a similar sum paid originally for the coal *in situ*; and allowance for this cost price must inexorably be made before profits can correctly be determined. With the assumptions made, the mining company can no more legitimately treat the net annual

receipts as net profits than can the merchant neglect the cost price of his commodity, or the manufacturer disregard the factory cost of his product in his estimate of profits. Thus assuming again that the total cost of mining and selling the coal, including all the direct outlay for operation, amounts to 55 cents per ton, the company, after exploiting 100,000 tons, should show in its Profit and Loss account:

FORM 74.

Dr.	*Profit and Loss.*	*Cr.*
Expenses	$55,000	Sales $100,000
Exhaustion of mine	25,000	
Balance available for dividends	20,000	
	$100,000	$100,000

and having paid out the full profits the Balance Sheet should show:

FORM 75.

Dr.	*Balance Sheet.*	*Cr.*
Cost of mine	$250,000	Capital $250,000
Cash, etc	25,000	Depreciation of mine 25,000
	$275,000	$275,000

The same process being continued until all the coal is disposed of the Balance Sheet should be:

FORM 76.

Dr.		*Balance Sheet.*	*Cr.*
Mine—cost price	$250,000		Capital $250,000
Less exhaustion	250,000		
		0	
Cash, etc		$250,000	
		$250,000	$250,000

During the course of business the net cash receipts amount to $450,000, but because of charging to Profit and Loss a sum representing the cost price of coal, the total profits shown and distributed amount only to $200,000, while there steadily accumulates in the treasury a sum which at the end of operations equals the original cost of the mine.[1] This would serve to return the capital stock.

Such treatment of the accounts met with the practically unanimous approval of accountants, when in 1889, the accounting world was startled by the now historic decision in the English case, Lee *v.* Neuchatel Asphalte Company, Limited. (L. R. 41 Ch. Div. 1.) Here action was brought by a shareholder to prevent a company formed to work certain asphalt deposits from paying dividends without making allowance for the exhaustion of the deposits. But the court refused to interfere. Unfortunately for the peace of mind of accountants, jurists, and company directors, the decision itself was somewhat vague in principle, contradictory in detail, and difficult of apprehension. But the case at least decided the principle that there is no requirement compelling companies to make allowance for the exhaustion of their capital invested in " wasting " assets.

So counter was this to the teaching of text-books, and the practice of accountants that it immediately attracted attention and criticism. In the current discussion in the *Accountant*, the organ of the Chartered Accountants, it was almost universally condemned. It was claimed that the decision showed " a feeble grasp of the fundamental principles of accounting " and to be " utterly at variance with the views of all practical accountants and prudent men of affairs." The " Dictionary of Political Economy " appearing soon after the decision maintained that it " con-

[1] For the sake of simplicity the question of interest accruing on this fund is disregarded.

tradicts every sound principle of business and bookkeeping." Palmer, one of the most eminent authorities on company law has said: "The views on Lee are not shared by some other learned judges and they do not commend themselves to the common sense of accountants, economists, or business men in general," and he declares its system of ascertaining profits to be "obviously unsound."

In face of such united criticism coming from such varied authorities it requires some temerity to argue in favor of the decision; especially so since the decision, while it has frequently been followed in England and in the United States [1] has been said to have really no bearing on the question of the treatment of wasting assets, as in reality the value of the remaining deposits was greater than the original price paid for the concession.[2] It should be borne in mind that the decision was not expressed in accounting terms, nor was it a decision as to what constituted profits, but merely that a company, organized to work a wasting property might, in accordance with the terms of its own articles, distribute the net annual receipts without withholding a sum to represent the exhaustion of the mineral deposits, there being no creditors who were thereby harmed.

In the above case the question related solely to the treatment of the income of a company specifically organized for the exploitation of wasting assets, or as it is loosely phrased, "with wasting capital." The nature of such an enterprise precludes its permanence. The more successful its operation, the shorter its life. Like Nan Netticote, of the childish conundrum, the more brilliant its career, the

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[1] See e. g. the clear and important decision Excelsior Water & Mining Company *v.* Pierce. 90 Cal. 131 (1891). United Verde Copper Co. *v.* Roberts 156 N. Y. 585 (1898).

[2] Bond *v.* Barrow Hæmatite Steel Co. [1902] 1 Ch. 353, and Wilmer *v.* McNamara & Co. [1895] 2 Ch. 245.

sooner it ends; the more efficient its management the more quickly will its resources be exhausted. Such an enterprise differs radically from an ordinary industrial undertaking where the element of permanence and continuity is implied. The decision in Lee, therefore, did not necessarily apply to any enterprise other than those with wasting assets.

Five years later a decision almost equally important was given which greatly extended the idea that losses might be suffered without affecting the Profit and Loss account. This was in the case of Verner *v.* The General and Commercial Investment Trust, Limited ([1894] 2 Ch. 239). This concerned a company organized to purchase stock of various other companies, the sole function of the Trust being to make speculative investments dividing the net income as dividends to its own stockholders. The investments made were in diverse enterprises and were made purely for the sake of the income to be derived therefrom. In this particular instance, nearly $5,000,000 had been raised by shares and debentures, all of which had been invested. But some of the investments had been poorly selected, and many of the investments having fallen in value, some of them proving altogether worthless, there was an admitted loss of over $1,000,000, equal to one quarter of the capital. Receipts of interest and dividends, however, largely exceeded the current expenses, and the case turned on the legitimacy of paying these net receipts as dividends, instead of using them to make up the loss due to the decline in the value of the investments. The decision held that such dividends were proper, despite the general legal principle that dividends may not be paid out of capital.

Here there was, of course, no question of wasting assets. Investments were not made for the purpose of exploitation and exhaustion, but for permanent income. In the decision, Lord Justice Lindley held that while in general divi-

dends cannot legally be paid out of capital, yet that does not imply that in all cases the loss of capital must be made up before dividends may be paid. A distinction was made between the loss of what was termed fixed capital and of circulating capital. Dividing the income of a company, without the replacement of the circulating capital consumed in producing the income, is a payment of a dividend out of capital, such as is prohibited by law.

"Fixed capital may be sunk and lost and yet the excess of current receipts over current payments may be divided, but floating or circulating capital must be kept up, as otherwise it will enter into and form part of such excess without deducting the capital which formed part of it will be contrary to law."

In this decision the principle that capital need not be kept up before declaring dividends, which in Lee *v.* Neuchatel Asphalte Company was applied only to wasting capital, was extended to so-called "fixed capital" permanently invested in a peculiar enterprise known as a trust. In the following year the doctrine was extended in the case of Wilmer v. McNamara and Company ([1895] 2 Ch. 245) where a decline in the value of the Goodwill of a company was held not to interfere with the payment of dividends on the ground that this loss also was one of fixed and not of circulating capital. Even more far reaching was the decision in the Kingston Cotton Mill Company case ([1896] 1 Ch. 348) that the rulings, which in Lee and Verner were applied to companies of a peculiar nature, would also apply to an ordinary manufacturing concern.

In the case of the National Bank of Wales ([1899] 2 Ch. 629) a decision was given which was even more sweeping in its effect. There the loss which had occurred was one which might be considered a loss of circulating

capital, for it was due to the shrinkage in the value of loans made by the bank. But the decision sanctioned the payment of dividends in a year when profits had been earned despite the fact that the losses of previous years were still uncovered. Soon afterwards Justice Wright relying probably on this decision, stated in the case of Crichton's Oil Company: "I do not think that there is any rule of law that profit on one year's trading cannot be divided merely because in the Profit and Loss account there is a deficit over on the balance of former years." ([1901] 2 Ch. 196.)

A similar opinion was expressed by Vaughan Williams in the decision in the case of Hoare and Company, Limited. "However much capital you have lost at any given date, if your Profit and Loss account shows a profit balance, then to the extent of that profit balance you are entitled to distribute that money as dividend notwithstanding the fact that you have lost capital which you have not replaced." ([1904] 2 Ch. 208.)

The adoption as a general rule of the principle enunciated in these decisions would be to treat each year as a separate unit, and if a judicious arrangement of the accounts could be made so as to show alternately net annual profits and losses, to allow a continued distribution of dividends despite the fact that there was a constantly growing deficit due to the loss of circulating as well as fixed capital.[1]

The validity of the decision in the National Bank of Wales case has, however, been very seriously questioned, for although it was upheld in the House of Lords (Dovey *v.* Cory [1901] A. C. 477) the judgment in the last court was based entirely on technical grounds, relating to the liability of the defendant director, and in no way vouched for the correctness of the doctrines relating to profits.

[1] See F. B. Palmer, Company Precedents, I, p. 764.

Furthermore, each one of the Lords rendering opinions in the latter case took unusual pains to call attention to the the fact that his approval of the decision of the lower court did not imply approval of the doctrine there enunciated as to the treatment of lost banking capital. Again in 1904 it was held that where a company showed a deficit from a preceding year, it was illegal to pay as dividends the profits earned later until the preëxisting deficit had been made up, and that such a dividend was a payment out of capital. (Towers *v.* African Tug Co. [1904] 1 Ch. 558). But unfortunately no discussion is given of the principle involved, for the decision concerned the competency of certain stockholders to sue and not the legitimacy of the dividend which was assumed to be illegal without discussion. And the significance of the decision in Verner is somewhat lessened by the later important case of Bond *v.* Barrow Hæmatite Steel Company ([1902] 1 Ch. 353) where, while accepting the earlier decisions regarding the loss of fixed or wasting capital as binding, the court regarded damages to iron mines and the destruction of a blast furnace and workmen's cottages as all being losses of circulating, not of fixed capital.

The latter decision emphasizes the unsatisfactoriness of the distinction which the courts have attempted to draw between a loss of fixed and one of circulating capital. If by this is meant a loss of fixed and circulating *assets,* there is, of course, the difficulty already alluded to of determining in any concrete case which class of assets has been lost. As the Lord Chancellor said in Dovey *v.* Cory, " The distinction between fixed and floating capital, which may be appropriate enough in an abstract treatise like Adam Smith's ' Wealth of Nations ' may with reference to a concrete case be quite inappropriate."

In no system of classification known to economists from Adam Smith down is an iron furnace included, as it has

been included by the court, in the list of circulating capital. But the objection to this distinction from the technical view point of accounting is even more serious. Part of the assets may be lost, but no particular asset is an embodiment of any particular credit in the Balance Sheet. The asset in question may, indeed, have been bought with the cash paid in on subscriptions to Capital Stock, or from the proceeds of an issue of bonds, or by incurring floating debt, or by investing the profits of the business. But the destruction of this particular asset is not thereby made specifically a loss of Capital, or of Funded Debt, or of Current Liabilities, or of Profits. To the accountant the distinction between the Credit items in the Balance Sheet and the Assets is vital. They represent entirely different conceptions and are not to be confused.

The decisions of the American courts are perhaps even more confusing and less satisfactory. This is striking because of the fact that in this country the courts have clung rather tenaciously to an invention—now happily obsolescent—of Justice Story, that the capital stock of a corporation is a trust fund, to be held for the benefit of the creditors. So rigid a doctrine would seem to carry with it an unusual care that the capital should not be encroached upon. While the courts have, of course, rigorously opposed the direct payment of dividends out of capital, it has already been shown that there has been no consistent recognition of depreciation. As to the specific question of the loss of capital as something distinct from the loss of profits, the most striking decision is that of the Supreme Court of the United States in the case of Eyster *v.* Centennial Board of Finance: " The receipts of the exhibition, over and above its current expenses are the profits of the business. . . . They are, in fact, the net receipts, which, according to the common understanding, ordinarily represent the profits of the business. The public, when refer-

ring to the profits of the business of a merchant, rarely ever take into account the depreciation of the buildings in which the business is carried on, notwithstanding that they may have been erected out of the capital invested. Properly speaking, the net receipts of a business are its profits. So here, as the business to be carried on was that of an exhibition and its profits were to be derived only from its receipts, to the popular mind the net receipts would represent the net profit."[1] (94 U. S. 503.)

In this case the enterprise was a peculiar one, analogous to a single ship venture; and perhaps to be decided on rules different from those of ordinary mercantile undertaking. In the case of Main *v.* Mills, a Federal Court declared: "There is, perhaps, at this day no better established rule of law than that the capital stock of a moneyed corporation, whether it be a banking, insurance, mining, or manufacturing company is to be treated and deemed as a trust fund for the purpose of securing the payment of the debt of the corporation. . . . The officers of such a corporation have no right to make dividends to stockholders unless there are profits to be divided, over and above all losses, because the necessary result of so doing is to deplete the capital fund. . . . If there are gains and losses, the gains should be set off against the losses so far as may be necessary to keep the capital fund whole." (16 Fed. Cas. 506 (1874).)

The State courts have varied in their decisions. The most interesting decisions are in Connecticut—that "net profit ordinarily means what is left after making good the capital"; in Michigan, where net profits are said to be ascertained by a comparison of present assets at actual

[1] It is to be noted here that the depreciation referred to is not the ordinary wear and tear due to time's ravages, but the loss of value, save as junk, of the buildings when the exhibition closed.

values, with the total original investment; in Iowa, where profits are made equal to assets, at actual value, less liabilities; and in California, and New York where the decision in Lee *v.* Neuchatel Asphalte Company, is openly applied to the dividend of a local mining company.[1]

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[1] The cases referred to are: Cotting *v.* N. Y. & N. E. R.R. Co. 54 Conn. 156 (1886); Richardson *v.* Buhl 77 Mich. 632 (1889); Hubbard *v.* Weare 79 Ia. 678 (1890); Excelsior Water & Mining Co. *v.* Pierce, 90 Cal. 131 (1891); and United Verde Copper Co. *v.* Roberts, 156 N. Y. 585.

CHAPTER XII

PROFITS (*continued*)

THE questions concerning the relation between capital losses and the payment of dividends are threefold. The first is as to the legality of such dividend; the second is as to the business policy; and the third as to the proper booking of such transactions. Each of these may in turn be subdivided as referring to Wasting Capital in the technical sense, to ordinary Fixed Capital, using the term loosely, and to Circulating Capital. 1. The *legality* of dividends, where the "loss" is merely an exhaustion of *wasting* capital is well established both in England and in this country. That dividends are legal despite the loss of *fixed* capital is supported by high—but not the highest—authority in England and by the United States Supreme Court, with the State courts divergent. But "all of the authorities agree that *circulating* capital must be kept up." (Bond *v.* Barrow Hæmatite Steel Co. [1902] 1 Ch. 353.)

2. The question as to the *business policy* of making dividends despite losses of capital is, however, independent of the legality of such action. It is most easily decided where the loss is of the first class, that is a loss of wasting capital, or taking the typical case, where the operations of the company consist in exploiting a mine. It has already been shown how the decision in Lee *v.* Neuchâtel Asphalte Company was almost universally criticised. Even Pixley in his latest edition of Duties of Auditors, styles the payment of such dividends "a suicidal policy and contrary

to the practice of soundly managed public companies" and "distinctly unwise and unbusinesslike."

Despite the high authority of the critics cited there is strong reason for justifying the payment of dividends without making allowance for the exhaustion of the mine. The discussion reduces itself to the question whether mining and similar enterprises are to be regarded as permanent undertakings, the capital of which should be maintained, or as temporary ventures corresponding to the character of the natural resources, from which capital as well as profits may be withdrawn as quickly as may be possible without injuring creditors or impairing credit. Those holding the former view claim that so much of the receipts as represents the return of capital should be reserved by the company, and invested so that at the time of the final exhaustion of the mine it would own other assets equaling the entire amount of the capital stock.

This view seems entirely to overlook the essential character of the enterprise. A mining venture is always a speculative undertaking. Subscribers to the capital know well that in the nature of things it cannot be a permanent undertaking, and presumably they are aware of its speculative character. Their sole object is to exploit a given deposit of mineral, and the logical thing seems to be to have the fruits of such exploitation turned back to the subscribers as quickly as may be. Granting that creditors are not misled nor harmed (and protection can easily be secured by contract) it seems absurd to require that a body of capitalists willing to invest in a peculiar speculative enterprise should be forced to form what is practically a trust company to invest part of the annual receipts against some far distant day of accounting. If one prefers a speculative enterprise with possible large gains, what is more unreasonable than to require that his venture should gradually be transformed into something entirely

different, an investment in long time and low rate securities. Better by all means, unless it is thought that paternalistic laws should force him willy-nilly to become conservative, to turn back to him the proceeds of the exploitation and allow him to make another similar venture if he sees fit.

Moreover, the very nature of the organization probably is an argument against the accumulation of a reserve. The officers of the mining company presumably were selected because they knew how to mine. But this so far from supporting, furnishes a presumption against, the supposition that they are desirable persons to keep and administer a large trust fund. From all points of view it seems much more sensible to allow the gradual return of capital invested in an enterprise which by its nature is terminable, than to demand the accumulation of a sinking fund.

A dictum of the United States Supreme Court, although given in other circumstances, is pertinent to this discussion: "A stockholder (said Mr. Justice Davis in Clearwater *v.* Meredith) enters into a contract with the company that his interest shall be subject to the direction and control of the proper authorities of the corporation to accomplish the object for which the company was organized. He does not agree that the improvement to which he subscribed should be changed in its purposes and character at the will and pleasure of a majority of the stockholders so that new responsibilities and, it may be, new hazards are added to the original undertaking. He may be willing to embark in one enterprise and unwilling to engage in another. (68 U. S. 40.)

This statement was made regarding an extension of a line of railroad out of profits which otherwise would have been distributed to the stockholders. If it applies to a mere extension of a similar enterprise, much more should it hold as regards enterprises so utterly divergent

in character as the speculative exploitation of a mine, and the establishment of a trust fund.

On the other hand there are certain circumstances in which it might be highly desirable for the company to withhold a sum corresponding to the exhaustion of the wasting capital and reinvest in other similar enterprises. Thus a manufacturing company owning its own coal or iron mines might most wisely reinvest in new mines as the old ones were depleted. But this is a special case. All that is claimed is that there should be no general rule that there must be a withholding of receipts. Even a reinvestment in a similar enterprise requires special justification; the creation of a fund to be invested in outside securities of an entirely different nature is much less to be favored.

The policy of paying dividends despite the loss of capital where the investment was in other than wasting property is not so easily defended. Here there is a real loss, not a return of capital; here the enterprise is normally a permanent not a terminating one; here the whole purpose of the enterprise is not to exhaust and return the capital but to use it in business.

Circumstances may, however, justify even such a payment of dividend. For instance, an individual's entire income is derived from ten houses each worth $10,000 and each yielding 10 per cent. net income. If two of these houses burn down, uninsured, the common sense view is that the proprietor's income is thereby cut down from $10,000 to $8,000 per annum, and that coincidentally there is a loss of capital of $20,000. It never occurs to him that he must consider his income as entirely cut off for two years until the principal can be restored. Similarly it might be an act of cruelty to dependent stockholders to stop dividends entirely until an exceptional loss is reimbursed. The main difficulty is that in a corporation such an occurrence really calls for a reduction of

the nominal capital, a cancellation of part of the capital stock. The red tape and legal expense of doing this, perhaps too the bad effect on the company's credit of giving public notice that there has been an encroachment on capital, make directors loath to do so. The criticism properly to be made is not so much that dividends are paid before restoring the capital (i. e., increasing the assets until they again equal the capital), but rather that the capital stock has not been reduced to correspond with the amount of remaining assets, before the dividend is paid. To allow dividends to be paid while assets are less than the nominal capital seems to render nugatory all the legal provisions regarding the reduction of capital stock. Why enact such careful legal restrictions and yet suffer the same results to be reached by the methods permitted in the case of the General and Commercial Trust? The hardship of going entirely without dividends for a series of years may perhaps be considered only a fair return for the exceptional privileges granted to stockholders.

As to the policy of paying dividends when there has been a loss of so-called " circulating capital " there is no argument, provided the meaning of that phrase is taken to be that the income of the company is less than the outgo, and furthermore that there is no accumulated reserve out of which dividends can be paid. Certainly if nothing has been earned all agree that there should be no dividends.

3. The critics generally assume that the courts justify the Neuchatel Asphalte Company and the General and Commercial Trust in presenting accounts misleading and incorrect. Thus Palmer in his masterly work on Company Precedents says: " The views expressed in Verner *v.* General and Commercial Investment Trust involve the proposition . . . that the Balance Sheet need not disclose the true condition of the company. It deals as regards the assets not with existing facts but with past history. It

shows what the particular assets cost, not what they are worth. Thus if a company buys a property for £10,000 and the value has fallen to £1,000, it will properly be entered on the Balance Sheet as property that cost £10,000; and it will remain at that figure, even though each year, by consumption or otherwise, it depreciates more and more."[1] This implies that the court justifies the use of the last form given on page 200. But this opinion, which is shared by many another critic, not merely ignores the possibilities of accounting technic, but more strangely disregards the express words of the decision itself in which Lord Justice Lindley states: "It is obvious that capital lost must not appear in the accounts as still existing intact; the accounts must show the truth and not be misleading or fraudulent." ([1894] 2 Ch. 267.) Similarly in the later case of Barrow Hæmatite Steel Company ([1900] 2 Ch. 857) Justice Cozens-Hardy very clearly intimates that, although a loss of capital may not prevent the Profit and Loss account from showing a balance available for dividends, the Balance Sheet would at the same time show or imply the loss which had taken place.

While the professional accountant sometimes advises a client as to the legality of certain transactions, the language of accounting is itself not concerned with legal technicalities. Whether or not the law permits a company to hold its own stock, to issue stock or bonds below par, to make stock dividends, or as in the case here to pay dividends while assets are less than the nominal capital is an important, but purely legal matter. If the transaction named has taken place the question as to its technical legality has not—or at least should not have—anything to say as to the statement of facts by the accountant. It may be logical to claim that *all* losses or gains, however caused, should go to Profit and Loss, and not direct to some

[1] Vol. I, p. 757.

other Proprietorship account. But such a claim, while logical enough, does not at all conform to accounting practice of any land or time. Once granted that some losses need not appear to the debit of Profit and Loss, the duty of the accountant is plain, and his task is simplicity itself. The loss—say that cited by Palmer—being excluded from Profit and Loss must appear elsewhere. If law requires or permits the reduction of nominal capital stock, and that is done, the loss is deducted immediately from the Capital account. Thus a company which at first shows

FORM 77.

Dr.	*Balance Sheet.*		*Cr.*
Plant	$10,000	Capital Stock	$22,000
Miscellaneous Assets	15,000	Profit and Loss	3,000
	$25,000		$25,000

will after the unfortunate experience, have as its Balance Sheet:

FORM 78.

Dr.	*Balance Sheet.*		*Cr.*
Plant	$1,000	Capital Stock (reduced)	$13,000
Miscellaneous Assets	15,000	Profit and Loss	3,000
	$16,000		$16,000

If the legal steps necessary to reduce the nominal capital have not been taken, the showing should be:

FORM 79.

Dr.	*Balance Sheet.*		*Cr.*
Property	$1,000	Capital Stock	$22,000
Miscellaneous Assets	15,000	Profit and Loss	3,000
Loss on Capital Account	9,000		
	$25,000		$25,000

Of course some other descriptive term may be used in place of "Loss on Capital Account," the only requirement being that it be not misleading. And greater explicitness can be introduced by indicating the shrinkages, perhaps as follows:

FORM 80.

Dr.	*Balance Sheet.*	*Cr.*
Property		Capital Outstanding..... $22,000
Original Cost .. $10,000		Less Shrinkage, per Contra 9,000
Less Shrinkage. 9,000		
	$1,000	$13,000
Miscellaneous Assets.....	15,000	Profit and Loss..... 3,000
	$16,000	$16,000

The matter is simple—all that is needed is clearness and honesty—and the facts can be presented in various satisfactory forms. The undesirability of paying dividends while capital is diminished has nothing to do with the necessity of truthfully showing what has taken place. That such is seldom or never done is perhaps unfortunately true, but it does not depend altogether on the much criticised decisions of the courts.

The rule that a shrinkage of capital should be shown in the Balance Sheet is, perhaps, to be modified in cases where the loss is incapable of exact, or even approximate, estimation. Thus the cost of an oil well represents wasting capital which logically should be written off as the oil is exhausted. But the estimate of the oil supply is so much a matter of guesswork that it may be better to retain the known cost, without attempting any estimate of the rate of exhaustion. Accordingly mining enterprises generally make no allowance for exhaustion. But in some cases, of which the Colorado Fuel and Iron Company is an instance, regular charges are made against profits for

each ton mined. The idea is, of course, to show the present actual value. Where the amount of shrinkage is known, it must appear in the accounts. But where the accuracy of a valuation is specious, where the only ascertainable value is the original cost, it may be less harmful for the Balance Sheet to show the cost, indicating that it does not represent the present value. The interested persons can then make their own allowances for shrinkage of capital assets.

There are a few questions which arise regarding the Credit side of the Profit and Loss account, that is, as to whether certain increases in the net wealth should appear in that account. Among these may be mentioned the receipt of premium on capital stock. It is evident that such receipts are in no sense profits arising from the business, and custom is opposed to crediting them to Profit and Loss, although by the dictum of Lord Romer in Hoare and Company ([1904] 2 Ch. 213) they may legally be applied to the payment of dividends. In banks, where the issue of stock at a high premium is especially frequent it is customary to credit Surplus, and such treatment is altogether to be approved.

Premium received on bonds is different in its nature. Here the receipt is an offset for high interest paid, or a bonus received because of exceptional credit. It is directly proportioned to the time that the bonds run. And as the annual interest is charged against profit during each year of the life of the bond, the only correct method is to credit as an offset to this charge a proportionate part of the premium received. No objection would, however, be made to a conservative placing of the entire premium in some general Reserve account, and, of course, if the amount received is small, it would be hypercritical to demand that it be minutely divided through a long series of years.

Premium arising from the reissue of stock forfeited because of nonpayment of assessments should be treated

as any other premium on stock, that is, carried to Reserve or Surplus rather than to the current Profit and Loss account. But the objection to crediting the excess to profits is based on accounting principles, not on law (Gratz *v.* Redd, 4 B. Mon. Ky. 178).

More interesting is the broader question as to whether appreciation in the value of the so-called capital assets is divisible as profits. This is clearly the reverse of the question previously discussed. There the concept of a loss of capital as something distinct from a loss of revenue was introduced. The reverse, that there is possible an increase of capital which is not profit involves the same principle. Discussion has been somewhat confused by not clearly distinguishing between an appreciation which has been realized, and one which is estimated only. But where the gain is actually realized, it certainly may be credited to Profits, although if the gain be exceptional it would conservatively be placed to some Surplus or Reserve account. This doubt less is inconsistent with the doctrine of Lee *v.* Neuchatel Asphalte Company. Indeed one argument given by the court in favor of excluding the shrinkage in value of capital assets was that a contrary rule would imply that dividends might be paid out of the increase in value of capital, which was said to be " contrary to all practice and to principle."

But this very doctrine, in so far as it relates to a realized gain, was soon fully admitted in Lubbock *v.* British Bank ([1892] 2 Ch. 198) which has since been followed in various decisions. However successfully the courts attempt to distinguish between capital and revenue, or even between a shrinkage of capital and a loss of revenue, there is now no effort to differentiate between a realized gain due to the appreciation of capital assets and other income.[1]

[1] Some exceptions to this may be found in case of the final distribution of assets of liquidated concerns.

More delicate is the question of unrealized profits. In the discussion of the Inventory in Chapter IV, it was shown that mere fluctuations in value may be disregarded; and that even permanent appreciation, if it is of assets whose nature is such that the gain cannot be realized by the going concern, should similarly be left out of account. Thus an estimated appreciation in the value of the factory site should be left out of account, even though the estimation have every element of certainty. The prohibition of thus marking up assets precludes any credit in the Profit and Loss account, or elsewhere. But where the appreciation is in merchandise, or in what are commonly called circulating assets, there is less uniformity. It has been seen that German law distinctly prohibits the taking of profits due to appreciation of unsold merchandise, even where the increased value is evidenced by quoted prices in produce or stock exchanges. But on the other hand Austrian law authorizes the taking of such profits. A leading Massachusetts case held: "The profit and loss of trade in merchandise is not confined to that which results from sales. Depreciation or advance in value of the stock unsold must also be taken into account. (Meserve *v.* Andrews, 106 Mass., 419 (1871).) But in this case there had been a loss by fire so that the ruling regarding an advance in value is less authoritative. Furthermore, the case referred to a final settlement or dissolution of partnership, which differs in important particulars from the status of a going concern. The opinion of accountants, always siding toward wise conservatism, is well-nigh unanimous against taking profits on unsold goods.

But the difficulties are not yet all settled. Frequently goods have actually been sold at an advance, but the payment for them has not yet been received. Or interest on loans and investments may have accrued, but either is not yet matured, or if matured, is not yet paid. Had cash

been received these would most obviously be counted as profit, but objection has at times been made to including in profit anything not received in cash. From the maze of discordant decisions the puzzled accountant seeks in vain for a safe guide. The earlier English cases were satisfactorily clear, especially Stringer's case (L. R. 4 Ch. 475 [1869]) where it was held that cash need not be in hand, and that the obligations of the Confederate government honestly estimated as good, were a correct basis for determining profits available for dividends. This decision has long been accepted as authority, yet an entirely different doctrine was enunciated so late as 1902 in Badham *v.* Williams, in which Justice Kekewich gave an opinion so remarkable as to deserve quoting at some length: "If it is a mere question what were the profits made in a particular year, it seems to me that the duty is to ascertain what cash has been received and what cash has been expended, and, if that is fairly done, you know the profits of the year. If there is a large outstanding liability which cannot be settled, the partners will estimate that, and it will not be considered as part of the profits. If there is a large outstanding possible loss, and there is a large sum due to a client, then you would provide for that. But in ascertaining what is really actually divisible for the year fairly, you take the cash account as it stands. . . ."

"A merchant in London consigned a cargo to some foreign port for sale in 1901. Suppose the payment is made by bill perhaps at six or three months, it may run into 1902. Now, are they to treat that as concluded in 1901 and consider that business as attributable entirely to 1901 when the bill may not be met at maturity? Are they to consider those as so much cash for the purposes of that business? It seems to me that that would be entirely wrong in the absence of a special agreement. For the purposes of the balance sheet, no doubt, they would estimate

that there is an outstanding asset which they hope to realize; but for the purpose of ascertaining the profit and loss—that is to say, what is to be divided it seems to me that they must consider only what they have received, because those bills will only come in when met at maturity in 1902." (86, L. T. R. 191.)

In the United States the courts have more generally considered that only actual receipts and payments are proper entries in the Profit and Loss account. It is true that the United States Supreme Court in 1893 (Reagan *v.* Farmers Loan & Trust Co., 154 U. S., 362) held that accrued interest payable should be considered, but that did not cover the question of interest receivable. As has been seen the same court in Eyster *v.* Centennial Board of Finance identified profits with net receipts. In California, moreover, it has been specifically held in People v. San Francisco Savings Union that interest accrued, even on United States bonds, cannot be considered in determining profit. In the course of the decision, which is well worth reading in full, the court says: "It is not easy to comprehend how *profits or surplus profits* can consist of earnings never yet received. The term imports an excess of *receipts* over *expenditures* and without *receipts* there cannot properly be said to be profits. Money earned as interest, however well secured or certain to be eventually paid . . . does not constitute surplus profits within the meaning of the statute." (72 Cal. 199 (1887).)

In New Jersey and Missouri, on the contrary, it has been held that profits are not necessarily limited to money received. (Jones *v.* Davis, 48 N. J. Eq. 493 (1891). Slayden *v.* Coal Co. 25 Mo. Ap., 439 (1887).)

Much of the confusion is doubtless due to a mere difference in terminology, and oftentimes the term "profits" in legal use means "profits available for dividends." The courts may well place certain restrictions on the pay-

ment of dividends which would not at all correspond with the accountant's limitations of the concept of profits. Indeed, this is in many cases done by statute; as is true in a number of the Spanish American Republics, which prescribe that only liquid profits may be paid as dividends. It may be accepted that it is incorrect to base a dividend on unrealized profits, or indeed that an unrealized gain is " not profit, but the hope of profit." There is good business conservatism in the argument of Dupin, " One does not divide hopes, however well-founded; one does not divide a phrase, but money. A dividend before going out of the treasury of the company, ought first to have come into it." [1]

But the distinction between unrealized and realized profits is by no means the same as that between profits which have been received in cash and those otherwise represented. Profits are in fact realized when once the transaction is completed. If it is a sale of merchandise the selling price includes both profit and a portion of the capital. It matters not whether this price is represented by cash, or by the note of the purchaser, or by other assets received in payment, provided, of course, that there is no valid doubt as to their real value. If the claim against the purchaser is good, profit has been realized; if the claim is not good, there is not only an absence of profit but a further loss representing the original investment. To recognize part of this sum as good and to discriminate against the other larger part is clearly illogical. Illogical is the attitude of the California court that the claim for one per cent. interest against the government may not be counted good, while the hundred per cent. of principal still stands among the assets at its full value.

The whole discussion of the form in which profits are received involves the frequently recurring confusion to

[1] Quoted in Bastide: *Des Dividends fictifs*, p. 36.

which reference has been made, between assets and the credit side of the Balance Sheet. The assets cannot be distinguished as being this capital and that profit. All the assets together equal capital and profits. Hence as Mr. Ernest Cooper has pointed out the question as to whether the profits are liquid or not cannot legitimately be raised.[1]

Furthermore, it is quite possible for a company to pay dividends even though it has no cash. Thus the Dutch East India Company regularly paid part of its dividends in spices. A more modern instance is the dividend declared in 1907 by the Atlantic Coast Line and paid by its own certificates of deposit, then lying in the treasury.

But it certainly would be unwise for a court to compel the payment of a dividend in the absence of liquid assets and the decisions cited are based on this practical objection rather than on any recognized principle that profits exist only when in cash. And even unliquidated earnings have at times been made the basis of compulsory dividends, as in the case of the charter of the Prussian See-Handlungs-Gesellschaft, which prescribed the issue of scrip where cash was not available. In charity to the courts the decisions cited are to be interpreted not as meaning that only cash earnings are profits, but that the courts will not compel a company to pay a dividend when the absence of cash or its equivalent might compel a perhaps disadvantageous borrowing, or a loss due to a forced sale of some of the assets.

Other decisions of the courts are rational only in a similar loose interpretation. Thus it has been held: "All the debts (other than funded debts) . . . are debts to be paid before the profits can be ascertained." (Corry *v.* Londonderry & Enniskillen Ry. Co., 29 Beaven 263 [1860]), and while it was later said to be a "curious theory . . . that there never can be any available income

[1] *Accountant*, XIV, p. 746.

or any profits as long as there is a debt remaining unpaid " (Mills *v.* No. Ry. of Buenos Ayres Co. 5 Ch. App. 621 (1870)) the same theory has more than once been openly propounded in American courts. Even the United States Supreme Court held that: " Net earnings are what is left after paying current expenses and interest on debt and everything else the company is liable to pay "; (Warren *v.* King, 108 U. S., 389, 398 [1882]) and the same high authority later defines profits as denoting: " What remain after defraying every expense, including loans falling due, as well as the interest on such loans." (Mobile, etc., R. R. *v.* Tenn., 153 U. S., 486 (1894).)

Taken literally the notion that debts must be paid before profits are ascertained is to the accountant both " curious " and " absurd." But that the court should refuse to order a dividend, when the depletion of the treasury might make an impending debt disastrous is perfectly reasonable. It is only to be regretted that in taking a conservative position, it should be done at the cost of confused terminology and questionable theorems.

The limitation of profits to cash receipts is closely connected with the question of borrowing funds with which to pay dividends. If profits have really been earned, the replenishment of the cash account through borrowing removes any objections which the accountant might have to the declaration of a dividend. But Lord Justice Lindley characterized the payment of dividends with borrowed money as being " as unjustifiable in point of law as it would be reckless and blameworthy in the eyes of business men." (Verner *v.* General & Commercial Trust [1894] 2 Ch., 266.)

Here again the decisions are discordant. In some cases the payment of dividends with borrowed funds has been condemned (Davis *v.* Flagstaff Silver Mining Co., 2 Utah 74; Belfast & Moosehead Lake Ry. Co. *v.* Belfast,

77 Me., 445 (1885)), but the lucid decision in Williams *v.* Western Union Telegraph Company (93 N. Y. 162 (1883)) showed that where the surplus had been invested in the plant, the company "could borrow money on the faith of it and divide that" (p. 192).

In the even more extreme case, where the Balance Sheet showed for a time no surplus because improvements had been charged against past profits, it has been held legitimate to credit back to revenue such expenditures, and then to borrow funds so as to distribute the surplus thus reëstablished. This was clearly brought out in Excelsior Water and Mining Company *v.* Pierce, where the expense of constructing a tunnel was charged up against profits. Afterwards the company borrowed funds representing the cost of the tunnel and used them to pay dividends. The court said: "The result is precisely the same as if the money had been borrowed sooner and the identical money borrowed paid out on the tunnel. Nothing has been accomplished beyond what the directors had a right to do, and surely the mode in which it has been done can make no difference. In fact, the transaction may be regarded as a temporary borrowing from the dividend fund of the sum necessary to meet an immediate demand, with the advantage to the corporation of keeping its money employed and saving it the payment of interest." (90 Cal. 131 (1891).)[1]

The accountant cannot disregard the decisions of the courts, or he may find that he has led his clients into an action for which they may be held liable. But it is evident that many of the decisions to which reference has been made are at least, on the face, opposed to what the accountant considers fundamental principles of his profession. Some of these contradictions can be smoothed over

[1] See also Mills *v.* Northern Railway, etc. (L. R. 5 Ch. App. 621 (1870).)

by recognizing that the courts and the accountants are attaching quite different meaning to the technical terms of commerce. Difficulty may be avoided by the accountant continuing to lean, as in the past he has generally done, toward conservatism, for while the courts, as in the question of loss of capital, sometimes permit, they never compel an excessive estimate of profits. But for a more perfect rationalization of the legal dicta concerning profits, it will probably be necessary to await the day when the growing dignity of the profession of accounting shall cause its principles to permeate the ranks of bench and bar.

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CHAPTER XIII

SURPLUS AND RESERVES

In the accounts of individual traders the Profit and Loss account is, at stated intervals, closed out, and the balance is carried to the credit of the proprietor's Capital account. Profit and Loss is thus in practice, as well as in theory, a mere temporary subdivision of the main Proprietorship account, and at the close of the year is indistinguishably merged with the latter. In corporation accounting it is necessary to keep the accretions of wealth separate from the original capital contributions. Nevertheless there is customarily a closing of the books, and an apportionment of the annual profits of corporations similar to that which takes place in the books of the individual or of the partnership. At such a time a part of the profits are normally voted as dividends and immediately pass out of the control of the corporation. But it is unusual to distribute all of the profits earned and there is ordinarily further action by the directors or stockholders deciding to retain part of the profits. The profits thus reserved from distribution are called Surplus, and constitute an addition to the capital of the concern, practically as in the partnership the profit balance is retained as capital by being added to the proprietor's account.

Even in corporation accounting the similarity between Capital and Surplus is sometimes observed, as for instance in the tabular statements prepared by the Comptroller of the Currency, in which Capital, Surplus, and Undivided Profits are all grouped and included in a single sum; and

not infrequently in published balance sheets Capital and Surplus are similarly combined.

While there are legal differences in the treatment of the two categories, yet from the view point of accounting, a Surplus represents capital secured by reserving profits, in contradistinction to capital contributed directly by the stockholders.

Some technical exceptions are to be found to the statement that a Surplus means reserved profits. A Surplus occasionally is established by a corporation *de novo,* before any profits have accrued, out of part of the contributions made directly by the stockholders. This is particularly the case in organizing banks where stock is often subscribed for at a premium. It is questionable whether this premium can rightly be credited to the Profit and Loss, or Revenue account. Some accountants permit this and the English courts have declared it legal (*In re* Hoare & Co. [1904] 2 Ch. 213). But statute law in Germany, and the better practice both in England and the United States, hold that such premiums are no part of ordinary profits, and as they cannot be credited directly to capital are to be placed in a special Reserve or Surplus account. Where this is done there is technically no reservation of profits, but at least it is a reservation of the excess above capital, the peculiarity being that an excess over capital, normally caused only by the gain of profits, is in this case created by a contribution of the stockholders.

Other circumstances in which a Surplus is created otherwise than by accumulating profits are: where the stock of a company is reduced without full return to the stockholders of the par value; where stock is bought in the market at less than its face value; and less clearly where bonds are similarly redeemed. The payment sometimes made by stockholders in return for having their holdings given the privileges of preferred stock, or other

similar advantages, likewise properly gives rise to a Surplus which strictly speaking is not profit. Occasionally, too, stockholders make a voluntary contribution, generally of stock, for the purpose of providing means for raising cash for working expenses, which again creates a Surplus not derived from profits. In all these cases it would not be illegal, except when statute law distinctly prohibits, as is the case in Germany, to treat these receipts as profits available for dividends, and they may therefore all be regarded as exceptions to the general statement that a Surplus or Reserve is a portion of profits withheld from distribution.

Accounting nomenclature, however, is so vague, that it is not always easy nor possible to determine from a Balance Sheet whether certain items represent an actual reservation of profits or whether they are merely Valuation Accounts; that is, accounts indicating that a deduction must be made from the book value of the assets. This may be illustrated by taking a company whose books, at the end of a year, make the following showing:

FORM 81.

Dr.	*Trial Balance.*		*Cr.*
Plant at cost	$50,000	Capital	$100,000
Accounts receivable	50,000	Sales	75,000
Expenses	50,000		
Miscellaneous Assets	25,000		
	$175,000		$175,000

This shows an apparent gain of $25,000, but no allowance has as yet been made for depreciation, without which profits cannot be determined. Assuming the depreciation to be $5,000 the Balance Sheet may show:

FORM 82.

Dr.	*Balance Sheet.*	*Cr.*
Plant at cost	$50,000	Capital	$100,000
Accounts receivable	50,000	Depreciation[1]	5,000
Miscellaneous Assets	25,000	Profits	20,000
	$125,000		$125,000

The directors or stockholders decide that business is so profitable that it will be desirable to extend the plant within a few years, and in preparation therefor vote to withhold $5,000 of the profits as the beginning of a fund with which to make the expected extensions; and in order to be on the safe side they vote to reserve $1,000 to cover any possible future loss which may occur when attempt is made to realize on the accounts receivable. They furthermore decide to hold $5,000 as a Surplus, or permanent addition to the capital resources, and vote a dividend of $8,000. This leaves an unappropriated balance of $1,000. The Balance Sheet then reads as follows:

FORM 83.

Dr.	*Balance Sheet.*	*Cr.*
Plant at cost	$50,000	(1) Capital	$100,000
Accounts receivable	50,000	(2) Depreciation Fund	5,000
Miscellaneous Assets	25,000	(3) Reserve for extensions	5,000
		(4) "Reserve" for Bad Debts	1,000
		(5) Dividends declared	8,000
		(6) Surplus	5,000
		(7) Balance of Undivided Profits	1,000
	$125,000		$125,000

[1] The depreciation account is purposely left on the credit side instead of being subtracted from the valuation of the plant in order to emphasize the distinction made below.

The terms here used are customary ones, but usage is not absolutely fixed and other titles are frequently met in Balance Sheets. So far as it is possible to give a fixed definition the differentiation in the terms used is about as follows:

Surplus indicates a portion of the profits withheld from distribution for the purpose of establishing a permanent addition to the effective capital of the concern. It does not imply any specific use to which it is to be put and is perhaps the most comprehensive of all the terms employed to designate reserved profits.

Reserve generally contains the idea of some special purpose for which the reservation is made. This is, however, not uniformly so, as there are frequently found certain Reserves made for some specific purpose, and a more general Reserve, which would correspond exactly to "Surplus" as used above. By some Reserve is differentiated from Surplus by implying some peculiar investment, as is shown later, but this is not a generally accepted convention. In Germany Reserve is the common term, there being no equivalent to Surplus.

Undivided Profits merely indicates, as the name suggests, a portion of the profits on which no specific action was taken. But the fact that it was not voted as a dividend does constitute it, in fact though not in name, a Surplus Reserve. The reason for differentiating is the unwillingness to distribute so closely the profits as to run the risk of having a Debit balance appear in the Profit and Loss account.

Other titles are used. Rest, in England, is the equivalent of Surplus or of Reserve (in the general sense); Reserve Fund is used, either as synonymous with, or with varying differentiations from, Reserve; Specific Reserves are often called by some distinguishing title, as, for instance, Renewal Fund, Sinking Fund, etc.; and in Ameri-

can Railroad practice the undivided profits appear as Balance of Income Account.

In examining a Balance Sheet, such as is shown above, the most important thing is clearly to distinguish between the items, of which Depreciation Fund (2) is the type, and those of which Reserve for Extension (3) is the type. This is all the more difficult in practice because the titles used are frequently more similar than those given above, for (2) is often called Reserve for depreciation, or Reserve Fund for Depreciation, and (3) may simply be called Reserve or Reserve Fund. Yet the real distinction between them is radical, and the use of the term Reserve in the former sense, while not uncommon in American accounting, is open to serious criticism. The Depreciation Fund does not represent profits at all; it does not indicate ownership of any net wealth in addition to that represented by the capital stock. On the contrary, it is a Valuation Account indicating that a deduction must be made from the value of assets given on the Debit side of the Balance Sheet. The Reserve for Extension (3) is, however, a part of the profits; it does represent an addition to the original net wealth shown in the Capital account; it shows that assets have increased. To distinguish between Valuation Accounts and Reserves proper is therefore no less important than it is difficult.

Item (4), " Reserve for bad debts " is perhaps even more difficult to classify. There has been no wear and tear. No one of the accounts is known to be bad; no single one of them is even suspected. Each is carried on the books at its full value, and perhaps no one of them would be sold at a discount of two per cent. Yet ordinary common sense and business experience show that a loss is likely to occur, and a Reserve is provided so that if a loss should take place it need not be charged against the current profits. From the outside it is impossible to say whether this

is nearer akin to depreciation or to a reservation of profits. If under the law of probabilities the loss is practically certain to take place, it is logically a depreciation for an unrealized but existing loss. If the creation of the Reserve was based on a minimum certainty and a maximum of prudence it represents a reservation of profits. The balance left standing to the credit of Undivided Profits is logically and legally a Reserve, even though not technically so called. Profits which might have been distributed were not voted as dividends and are, *ipso facto,* held as a reserve. The only difference is a psychologic one, and consists in the fact that the directors have apparently not expressed so definite an intention of permanently holding the balance, as they have done in regard to the Reserve for Extensions and Reserve for Bad Debts.

A Surplus, by whatever name it may be called, representing additional capital (normally derived from profits) the purposes for which it is created may be any of those for which capital is needed, or it may be used, as profits ordinarily are used, to provide means for paying dividends. More specifically reserves are created:

(1) To provide a permanent increase of capital
  (*a*) As an additional guaranty to creditors
  (*b*) To provide for extension of its fixed or other capital assets.
(2) To provide an additional capital which can be used to cover unusual losses or to provide for other emergencies without encroaching on the nominal capital, and
(3) To provide for equalizing dividends by retaining part of one year's profit to be used to make up scanty profits for other years.

1. The provision of additional capital as further protection to creditors is frequently specifically required by

statute. In this country the best example is found in the National Bank Act, which requires that one tenth of the annual profits must be retained until a Surplus amounting to twenty per cent. of the capital stock is accumulated. More comprehensive are the laws of Germany and France, which require all corporations to reserve a percentage of the profits, and in addition certain particular receipts, as, for example, premium on stock. In both these cases the purpose of the law presumably is to furnish additional security to creditors of the corporations concerned. Another example is the establishment of a Sinking Fund to pay off a bonded debt, which according to current practice in the United States is, as is shown below, a Reserve to protect the creditors.

The extension of the business through reserves is of frequent occurrence. A most striking instance is the Chemical National Bank which, with $300,000 capital stock, accumulated a surplus of $6,000,000. But the practice is of much older origin, for the Bank of St. Ambrose, established in Milan in 1593, made a practice of distributing only half its profits and accumulated a large surplus; and the early trading companies similarly divided only a fraction of their profits. Similarly many railroads and industrial corporations show reserves which make a very appreciable addition to their capital. An instance which has caused considerable discussion is the Wells-Fargo Express Company with $8,000,000 capital and over $16,000,000 surplus. In foreign countries the accumulation of permanent reserves is an accepted practice—the average reserve of all Austrian corporations being over 27 per cent. of the capital, while that of the savings banks is over 105 per cent.

2. The second class of Reserves is that created not to provide for a general extension of the enterprise, but to prevent its curtailment by providing a fund to be used in

special emergencies. A clear case is a Renewal Fund created by a steamship company to be used to replace vessels lost at sea. But more general aims may be in view, such as the provision against any unseen loss, whether caused by bad debts, by slack business due to hard times, or by any of the countless dangers which beset the course of business enterprise. Because of such a reserve the First National Bank of Chicago some years ago was able to charge off at one stroke a million dollars of its notes and bills, whose ultimate payment was made uncertain as the result of the panic of 1893. Another corporation in 1903 suffered loss to its property by the hurricane in Jamaica, a loss surely not distinctly anticipated, yet one which was most conveniently covered by a previous Surplus.

Such provision against unforeseen emergencies may perhaps be construed as one form of a protection for creditors, and the legal reserves mentioned above are as a matter of fact generally used to cover exceptional losses. But this provision inures as well to the benefit of stockholders, and in many cases the establishment of a Reserve for emergencies is inspired by regard for the stockholder rather than for the creditor—if indeed the two interests can be separated. Among such emergency reserves may be mentioned a " Reserve for personal injuries " of a coal company; a " Reserve for accidents " not unreasonably provided by a manufacturer of powder; and an " Accident fund " of a street railway company.

3. The final type of Reserves is that for the purpose of equalizing dividends. Here it is scarcely correct to say, as has been done by some writers, that the Reserve creates an addition to Capital, for Capital does not provide a fund for dividend paying. Here the Reserve preserves rather its original character as profits—profits not distributed during the current year, but to be distributed as dividends in future years, when the annual profits may be scant.

This is a most common practice of which many instances are found in American corporation finance.

The different purposes enumerated above are not altogether distinct or mutually exclusive, the provision for unusual losses, for instance, being at the same time an additional guaranty to the creditor and a means for equalizing dividends.

The purpose of a surplus may be more or less definitely limited and specialized. Most commonly, indeed, there is only a single Reserve created which is general in its character, and may be used for any of the purposes enumerated. On the other hand the purpose may be strictly limited, as for instance a Reserve for erecting a particular building, or for constructing a certain bridge. The United States Steel Corporation, for instance, as shown in its Balance Sheet (Form 29) has in addition to its several Sinking Funds no less than eight Reserves, including funds for contemplated appropriations, for authorized appropriations and for the specific purpose of building the plant at Gary, Indiana. The Balance Sheet of the Atchison, Topeka and Santa Fe Railway (Form 27) shows almost equal differentiation. But even where the Reserve is a special one there is no assurance that it will be devoted to the purpose for which it was created. The specific labeling of a Reserve is at best merely a declaration of the present intentions of the existing board of directors. As both intentions and boards are subject to change, there is no guaranty that the Reserve will be used for the indicated purpose. Continuity may, however, in some cases be secured by pledging certain funds representing the reserve, as for instance where investments representing a Sinking Fund are given in trust to sinking fund trustees who can use them only for the purpose of retiring specified bonds. A compulsory Reserve is also to a limited extent preserved from division. In Germany the uses to which it may be

applied are definitely prescribed; in this country the Surplus, compulsory for National and for some State banks is presumably safe from being used to pay dividends. But even here the restriction is only a limited one, for a loss which otherwise might have prevented dividends, may be charged to Surplus. Thus a company showing

FORM 84.

Dr.	*Balance Sheet.*	*Cr.*
Assets	$615,000	Capital $100,000
		Surplus 10,000
		Deposits 500,000
		Undivided Profits 5,000
	$615,000	$615,000

suffers an unexpected loss of $5,000 and charges this against Undivided Profits. It will then probably not be considered in a position to pay a dividend. But by charging the unusual loss against Surplus, there results the following:

FORM 85.

Dr.	*Balance Sheet.*	*Cr.*
Assets	$610,000	Capital $100,000
		Surplus 5,000
		Deposits 500,000
		Undivided Profits 5,000
	$610,000	$610,000

a showing which makes the legitimacy of a dividend unquestionable.

Frequently the designation given to a Reserve refers not to the purpose for which it was created, but to the source whence the surplus came. Thus are found the fol-

lowing items: Premium received on old stock, Stock purchase surplus, Real estate sales, Royalties, Surplus from redemption of bonds, etc., all of which indicate the source rather than the purpose of the Reserve.

A Surplus being a reservation of profits must be represented by equivalent assets. It is the increase of assets that creates all profit, and necessarily that portion of the profits reserved from distribution. To speak of a Surplus without equivalent assets is, therefore, self-contradictory. But with the ambiguous usage of the term Reserve the question often arises as to whether it represents assets or merely signifies the depreciation in value of some of the assets. Some writers have even demanded that the term Reserve should never be used unless it represent not merely the existence of equivalent assets, but that certain specific assets, of a particular character have been set aside to cover the Reserve.

Deferring to a subsequent paragraph some distinctions in terminology which have been involved in this controversy, it may here be inquired whether the distinction between a Reserve represented by specific assets—a specially covered Reserve or as some term it a Reserve Fund —and one not so represented is significant!

The primary objection to the claim that a Reserve on the Credit side of the Balance Sheet must be represented or covered by certain specific assets, is that it implies a confusion of the two sides of the Balance Sheet, of Goods accounts and Proprietorship accounts. The Debit side of the Balance Sheet lists certain specific Goods, the value of which, less liabilities, equals the sum of the various Proprietorship accounts; but there is ordinarily no specific asset corresponding to specific Credits. Bonds may have been issued to purchase plant, preferred stock to purchase present Goodwill, common stock to represent the estimated additional earning power of the consolidation, but

the Balance Sheet does not make a separate equation of these three pairs. It suffices to show that Plant + Goodwill = Preferred stock + Common stock + Bonds.

It is true that the equating of the various items is in part secured by the double account form of Balance Sheet required of certain English Companies, where the receipts from Capital Stock and Bonds are balanced against the more permanent investments. There is also a comparison made, though not a definite equation between various subheads frequently introduced into modern Balance Sheets, as for instance between Capital Assets and Capital Liabilities and between Current Assets and Current Liabilities. But even in such cases there is no real equivalence stated between a given Credit and some other Debit item. The equivalence of the Balance Sheet is that between the sum of the items representing proprietorship and liabilities and the sum of those representing assets. The groups into which these assets are subdivided and the various subdivisions into which Proprietorship is for convenience divided, are divergent systems of classification and should not be confused. In the varied shifting of form which continually takes place in the assets, an original correspondence between certain Credits and Debits becomes lost and the connection can no longer be traced. Undoubtedly every depositor and stockholder in a bank contributed some particular money or other asset equivalent to his deposit or his subscription; but the identity is lost at once upon the title passing to the bank and there is no specific asset representing the particular claim of A although, for convenience, there may be a comparison, though not a balancing of the items of Deposits and Cash Reserve, or of Deposits and Discounts.

Secondly, the setting aside of a specific asset does not make the Reserve any more secure, any more available. For instance, a Balance Sheet shows:

FORM 86.

Dr.	*Balance Sheet.*	*Cr.*
Miscellaneous Assets.... $120,000	Capital..... $100,000	
Investment of Reserve Fund..... 5,000	Debts..... 20,000	
	Reserve for Extension... 5,000	
$125,000	$125,000	

A debt becomes due, which because of financial stringency cannot be renewed or placed elsewhere. Unless the investments of the Reserve have been specifically placed in trust, they will in such an emergency probably be sold to provide cash to pay the debt. The Balance Sheet becomes:

FORM 87.

Dr.	*Balance Sheet.*	*Cr.*
Miscellaneous Assets..... $120,000	Capital..... $100,000	
	Debts..... 15,000	
	Reserve for Extension... 5,000	
$120,000	$120,000	

The specific investment has not made the Reserve for Extension any more available than it otherwise would have been, and the Reserve remains despite the disappearance of the specific investment. On the other hand the Reserve is no more secure because of the specific investment, for supposing that the business of the year following the showing of Form 86 results in a net loss of $5,000, the Balance Sheet then becomes:

FORM 88.

Dr.	*Balance Sheet.*	*Cr.*
Miscellaneous Assets $115,000	Capital..... $100,000	
Investment..... 5,000	Debts..... 20,000	
	Reserve for Extension...	
$120,000	$120,000	

so that while the specific investment is still intact the Reserve has disappeared as effectively as possible. It would be illegitimate to show

FORM 89.

Dr.	*Balance Sheet.*		*Cr.*
Miscellaneous Assets.....	$115,000	Capital.....	$100,000
Investment of Reserve Fund.....	5,000	Debts.....	20,000
Loss.....	5,000	Reserve for Extensions..	5,000
	$125,000		$125,000

for the Reserve indicates that there has been a reservation of part of the profits amounting to $5,000 while the Loss item shows there are no profits to be reserved. This is shown even by Pixley who, himself, argues strongly that a Reserve Fund must be specifically invested.

3. And finally, although this pertains to corporation finance rather than to accounting, the identification of Reserve with specific assets lends itself easily to two false theories:

(1) That an outside investment is a better holding for the corporation than an investment in extending its own plant, and (2) that where a fund of cash, or other liquid assets is desirable as a provision for emergencies, such provision need not be made out of capital, but only as profits accumulate. The first of these views is undoubtedly true in certain circumstances, as where provision is being made for an emergency demanding ready funds, but as a general principle it is without validity. The second view is altogether unsound and vicious in principle and in practice.

In such matters, where personal opinion and taste have much weight, it may be well to quote two leading authorities, one German and the other English. Says Rehm:

"A Reserve Fund is not an asset but merely a technical indication of property in such. It signifies that a given value of assets may not be distributed or disbursed; but as it is not assets it cannot be an item on the Asset side of the Balance Sheet, and accordingly it also cannot be transferred into assets and invested in given securities."[1] Dicksee similarly says: "It cannot be too strongly advanced that the question as to whether or not any given Reserve Fund is represented by assets consisting of marketable securities outside the business or by less readily marketable assets employed in the business as fixed (or working) capital, is comparatively speaking of little importance. The most casual perusal of any Balance Sheet will show at a glance, even to the least informed, by which class of assets the Reserve Fund is represented."[2] On the other hand, Pixley, Dawson, and Whatley object to the use of the term Reserve Fund where there is not a corresponding specific asset. In the case of Hoare and Company, before the Court of Appeals, Vaughan Williams, L. J., implies there is no Reserve Fund unless the assets are specifically set aside, but Romer and Cozens-Hardy, L. JJ., speak of a Reserve Fund where there is no separate investment. Somewhat more specific is the provision in the revised form of Table A of the English Companies Act. This is a model form of articles of association which applies to all companies unless they specifically adopt other articles. In this it is provided (Sec. 99) that reserves for any purpose may at the discretion of the directors "either be employed in the business of the company or be invested in such investments (other than shares of the company) as the directors may from time to time think fit."

In accounting practice much diversity is found. The

[1] *Die Bilanzen*, 571. See also H. V. Simon: *Die Bilanzen der Aktiengesellschaften*, § 60.

[2] Auditing, p. 287.

great majority of Reserves shown in Balance Sheets do not show a corresponding special investment. Where there is such an investment the more approved form is to indicate it by using some such title as that recommended by A. Lowes Dickinson, " Fund Assets," as for instance the Illinois Central shows " Assets in Improvement Fund," " Assets in Surplus Dividend Fund," and " Assets in Pension Fund," each of which is equal in amount to a corresponding Fund on the credit side of the Balance Sheet. In other cases the investments shown are not equivalent to the Reserve, only a portion of the Reserve being specifically invested as is seen by reference to the Balance Sheet of the United States Steel Corporation. In France the specific investment of reserves in outside securities is not customary.

An attempt is made at times to differentiate between what is called a Reserve and a Reserve Fund. Unfortunately there is no uniformity in the distinctions made, as is shown by the various definitions of Reserve Fund given by different authors.

1. " Reserve Fund is an asset item signifying that certain forms of wealth have been specifically set aside for a given purpose. This may or may not be the equivalent of a Reserve Account appearing in the credit side of the Balance Sheet." (Keister. Corporation Accounting, p. 71.)

2. " Reserve Fund is a credit item indicating that profits have been reserved and that a special fund of wealth will be found on the debit side of the Balance Sheet representing the reserve, one for which there has been a special investment made, a specially covered reserve." (Pixley. Duties of Auditors, I, p. 359.)

3. " Reserve Fund is a credit item representing that the reservation is made out of net profits, in contradistinc-

tion to Reserve Account, which indicates a charge to Profit and Loss before net profits are obtained. Reserve Fund indicates actual profits, Reserve Account may be merely a depreciation account." (Dicksee. Depreciation, Reserve and Reserve Funds, p. 51.)

4. " Reserve Fund is a Reserve for general purposes, with perhaps no distinct object in view but available for all contingent purposes, in contradistinction to a reserve account provided for a definite and well-known contingency." (Eddis. In Thorne's Twentieth Century Bookkeeping, § 424.)

5. " Reserve Fund is a Reserve which is shown on the Balance Sheet in contradistinction to Secret Reserve." (Rehm. Die Bilanzen, p. 543.)

In nomenclature employed in the present treatise the equivalents for several uses of the " Reserve Fund " given above are as follows:

1. Investment of Reserve (or similar title).
2. Specially Covered Reserve.
3. Reserved Profits, or simply Reserve.
4. General Reserve, or Surplus.
5. Open Reserve.

Much of the confusion is caused by the fact that the term Reserve is used in connection with banking and insurance in an entirely different sense from that in general bookkeeping practice. Thus the National Bank Act, general banking literature, and at times even the Balance Sheets of the banks use " Reserve " as indicating the entire cash on hand or deposits in certain banks deemed by law or custom equivalent to cash. A condensed Balance Sheet, such as is published for advertising purposes, may read

FORM 90.

Condensed Balance Sheet.

Resources.		*Liabilities.*	
Loans and discounts	$11,100,000	Capital	$2,000,000
Bonds	1,500,000	Surplus and Undivided Profits	1,100,000
Reserve	7,000,000	Deposits	16,500,000
	$19,600,000		$19,600,000

Reserve in this sense evidently has nothing to do with profits, and its maintenance is in no wise dependent upon the existence of accumulated profits; but in law and in banking practice it is proportionate to the deposits, not to profits. Similarly Reserve in insurance has a specific meaning referring to certain classes of assets which must be kept on hand to cover the actuarial value of outstanding risks. Again this is proportionate to a given item of liabilities, not to profits. In both of these cases the items are better listed, not under " Reserve " but under some title appropriate to the asset itself. The " Reserve " of the bank is really " Cash " and " Deposits with approved reserve agents " and is thus correctly stated in the detailed Balance Sheet. The " Reserve " of the Insurance Company is really " Cash," " Bonds," and similar items, while " Reserve," as it appears among the liabilities, is merely an indication that part of the accumulated profits is not to be distributed as dividends. It is not the assets themselves but represents at most a state of mind regarding certain assets. The exceptional use of " Reserve " in banking and insurance literature may sometimes be confusing but the matter is so simple that it should cause no serious misunderstanding.

A Reserve exists when an increment of assets is withheld from distribution to the stockholders or proprietors; that is, whenever the excess of the total value of the net

assets over the original capital is retained by the company. It is an ecomonic fact and is independent of whether the accounts show the existence of such a surplus or not. In corporations desiring to be considered conservative, or wishing to escape taxation, or to conceal large profits, it is not uncommon purposely to conceal the existence of such a Reserve. This is done whenever there is an undervaluation of assets, or less frequently when there is an overstatement of liabilities. In such cases there is said to be a Secret Reserve. Thus in a company whose Balance Sheet shows:

FORM 91.

Dr.	*Balance Sheet.*	*Cr.*
Plant, etc..... $90,000		Capital..... $90,000
Less Depreciation..... 5,000		Profits..... 5,000
	$85,000	
Cash.....	10,000	
	$95,000	$95,000

if an additional depreciation of $5,000 is reckoned, one not represented by an actual loss or decline in value, the Balance Sheet will read:

FORM 92.

Dr.	*Balance Sheet.*	*Cr.*
Plant, etc..... $90,000		Capital..... $90,000
Less Depreciation 10,000		
	$80,000	
Cash.....	10,000	
	$90,000	$90,000

Despite the statement here made the net value of the assets is really $95,000, which exceeds the capital by

$5,000. As no profits appear in the Balance Sheet, no dividends can be declared, and the $5,000 cash, which might otherwise have been distributed, is perforce reserved as an addition to the working capital of the concern. Such a condition may also be produced by treating as expenses, or by charging direct to Profit and Loss account, payments which really represent the purchase of new assets. If $5,000 is spent in making some unquestioned improvement or addition to the plant, the normal entry is to charge the amount to " Plant " or to some synonymous account. A change in the form of assets held from Cash to Plant does not affect Profits, or Surplus. But if the payment is treated as though it were a mere expense, the total assets are apparently diminished when the Cash is paid, and no showing is made of the new asset gained by purchase. Whether the charge is made originally to Expense and thus indirectly diminishes profit, or whether the charge is made direct against Profit and Loss, or against some special or general Reserve, the effect is the same. In one way or another the assets held are understated and to an equivalent amount the showing of accumulated profits is less than the correct amount.

Banks are especially given to this practice doubtless with the purpose of being able to cover losses without disclosing them to the public. Thus the First National Bank of New York City is said to have covered a defalcation of $690,000 because it had so large a Secret Reserve. This could be done by bringing into the Balance Sheet enough of the assets representing the Secret Reserve to cover the unusual loss.

Railroads, too, especially those desiring a reputation for conservatism have acted similarly either by violently marking down the value of the road, as was done by the Chicago and Northwestern Railway in 1893; or by charging to operation and maintenance sums representing very

material additions to the physical property, as was done by the same road to the extent of nearly $5,000,000 a year for the seven successive years from 1900 to 1906. An even more striking charge, one of $13,000,000, part of the expense of constructing its tunnel, was made by the Pennsylvania against a special Surplus in 1906.

Again appears a case of justifying a practice abhorrent to accounting principles, yet not without certain practical merits. In the anxiety to escape the prevalent temptation to exaggerate the value of the assets, which in many cases has led to such disgraceful results, conservative financiers applaud an equally erroneous, but perhaps less dangerous tendency to understatement. But the creation of a Secret Reserve is not without its dangers. It may be used as a means of refusing to pay dividends really earned, which so far as it applies to holders of income bonds or non-cumulative preferred stock, may work an irreparable loss. Even where there are no such divisions of interests it may lead ignorant stockholders, thinking the Balance Sheet correct, to dispose of their stock at less than its real value.

The position which the Interstate Commerce Commission has taken against the practice of charging to operating expenses payments really of the nature of betterments is decidedly healthful. This has already been attacked by the technical press, and has been spoken of as "casting to the winds the whole system of conservative finance which has been the boast of many American railroad companies."[1] This is curious as coming from the organ of the Chartered Accountants, whose council had previously taken ground that the existence of Secret Reserves makes the Balance Sheet criminally false. To identify conservative finance with incorrect statements is a dangerous precedent, for the use of untruth in a good cause is likely to induce an attitude of mind in which untruthfulness be-

[1] *Accountant*, July 20, 1907.

comes chronic and ineradicable. It is hard to believe that so good a cause as financial conservatism needs such unholy allies as misrepresentation and deception.

An extreme type of a Secret Reserve, one which the directors were authorized to expend without accounting to the stockholders therefor, was brought to notice in connection with the Birmingham Small Arms Company. The articles of the company authorized the directors to set aside, out of the profits, an "Internal Reserve Fund" which need not be disclosed by the Balance Sheet, the directors to use the Reserve Fund in any way which they think will promote the interests of the company without giving any information to the shareholders regarding the amount or application of this Reserve. In discussing this provision Justice Buckley said: "The special resolutions in the present case provide that the Balance Sheet shall not disclose the internal Reserve Fund; it must, therefore, omit on the assets' side of the Balance Sheet the assets which make up the amount standing to the credit of that fund and the contra item—namely, the credit balance of the fund—on the liability side. The result will be to show the financial position of the company to be not as good as in fact it is. If the Balance Sheet be so worded as to show that there is an undisclosed asset, the existence of which makes the financial position better than shown such a Balance Sheet will not, in my judgment, be necessarily inconsistent with the Act of Parliament. Assets are often by reason of prudence estimated, and stated to be estimated, at less than their real value. The purpose of the Balance Sheet is primarily to show that the financial position of the company is at least as good as there stated, not to show that it is not, or may not be better." ([1906] 2 Ch. 378.)

A Surplus being nothing but accumulated profits, its disbursement is secured in any way in which profits are disbursed save where some particular statute or by-law

prevents. More strictly speaking there occurs a cancellation rather than a disbursement of Surplus, for a Surplus in the sense of an account on the Credit side of the Balance Sheet cannot itself be disbursed. Certain tangible assets may be paid out and this may work a cancellation of the Credit. The bookkeeping entries in connection with such cancellation remain for consideration.

A Reserve created to provide against some unusual loss logically remains intact until such loss occurs. This may be a loss by fire or other accident, a loss due to default by trade debtors or on securities held, a loss due to unfavorable results in business operations. Such a loss would otherwise be charged to Profit and Loss, or to Capital, but where a Reserve is held the unusual loss may appropriately be charged against such Reserve, leaving the current profits from ordinary business still available for dividends. Similarly, where the Reserve is used to pay a dividend, otherwise unearned, there results a cancellation of some part of the Reserve, just as a dividend paid in ordinary circumstances works a cancellation of the credit balance to Net Profits. Whether the charge for dividend is made direct to the Reserve account, or whether part of the Reserve is transferred back to the Profit and Loss account from which it originated is immaterial so far as the final showing is concerned. The Reserve being a reservation of profits, may either be used to cancel any loss, as current profits would be used; or at any time may be canceled by retransference to Profit and Loss, which simply signifies that profits for a while *reserved* are no longer so, but are to be treated in the usual way.

But it has been shown that sometimes—and frequently—a Reserve is created not to cover a loss or make possible a dividend but to provide additional plant, to cover an Exchange, not a Profit and Loss transaction.

Thus in the following case:

FORM 93.

Dr.	*Balance Sheet.*	*Cr.*
Plant	$90,000	Capital	$100,000
Cash	20,000	Reserve for Extensions	10,000
	$110,000		$110,000

the Reserve may have been created for the specific purpose of purchasing an additional machine. The time has come when it is needed, and the Reserve is just sufficient to cover the cost. Cash is lessened by $10,000 when the machine is purchased but this expenditure is no loss, as a machine of equal value is received in exchange. Consequently the Balance Sheet should show:

FORM 94.

Dr.	*Balance Sheet.*	*Cr.*
Plant	$90,000	Capital	$100,000
Additions	10,000	Reserve for Extensions	10,000
	$100,000		
Cash	10,000		
	$110,000		$110,000

In many cases, however, Cash is credited and Reserve is debited showing merely:

FORM 95.

Dr.	*Balance Sheet.*	*Cr.*
Plant	$90,000	Capital	$100,000
Cash	10,000		
	$100,000		$100,000

But this is a case of creating a Secret Reserve, which has already been criticised. There is no justification in charging to Reserve anything which could not legitimately be

charged against profits. The purchase of a machine, an Exchange transaction, should not thus be charged. It may, however, be desirable to make some change in the Reserve item. It seems somewhat absurd to have a Reserve to provide for something already secured. Consequently the credit to Reserve for Extension may be canceled and a corresponding credit made either to the general Profit and Loss account, or to the general Surplus account. Or if it is desired to be more specific there can appear the cumbrous but minutely accurate phrase: "Reserve created by purchasing machinery out of profits." Any of these bookings is entirely correct. Crediting the Reserve back to Profit and Loss is legitimate but it indicates a change in policy, for if credited to profits dividends of that amount can then be paid and the machine is no longer paid for out of reserved profits but from capital. Doubtless a simple transfer to Surplus, or general Reserve most recommends itself.

The payment of debt, like the purchase of assets, is not a loss transaction, and similarly is not a logical charge against a Reserve. The treatment of a Reserve provided for the payment of debts, should, therefore, be identical with that of a Reserve for Extensions described above.

It is to be noted that the booking is identical whether the Reserve is specifically covered or not. Where specific investments are held, presumably they will be sold to provide cash with which to cover the payment. Thus with a Balance Sheet showing:

FORM 96.

Dr.	*Balance Sheet.*	*Cr.*
Plant, etc..... $90,000	Capital..... $100,000	
Investments..... 10,000	Reserve for Extensions.. 10,000	
Cash..... 10,000		
$110,000		$110,000

the company may make the addition to its plant contemplated when the Reserve for Extension was established. Whether the payment is made from the cash on hand or from $10,000 realized from the sale of the investments, is immaterial so far as it affects the rest of the Balance Sheet. In either case the item " Plant " is increased by $10,000, and the treatment of the Reserve is the same. The amount of the latter remains unaltered although the term used in the Balance Sheet may be changed as suggested in the preceding paragraph. Even when specific investments are held to cover the Reserve it may be that a flurry in the investment market makes it undesirable to sell them, and the purchase is made with cash already in hand or even by credit. In the last named case the Balance Sheet becomes:

FORM 97.

Dr.	*Balance Sheet.*		*Cr.*
Plant, etc.	$100,000	Capital	$100,000
Investments	10,000	Bills payable	10,000
Cash	10,000	Reserve	10,000
	$120,000		$120,000

This again emphasizes the fact that the booking of Reserves is practically independent of the existence of specific assets.

The item Reserve for Insurance is frequently found in Balance Sheets. It generally occurs where a company, whose plant is so widely scattered that there is little likelihood of large loss by a single fire, decides not to carry any insurance but to stand its own loss should one occur. In such circumstances it is assumed that the insurance premiums saved will more than cover losses as they occur. To carry out this policy an annual charge, perhaps equivalent to regular insurance premiums, is made against earnings, and an equivalent amount is credited to Reserve for Insurance. There may, or may not be a specific investment

made to cover the reserve. It is somewhat difficult to determine whether such a reserve is really a part of profits. Were the company to go into liquidation, or to change its policy and provide for future losses by carrying regular insurance the balance then standing to the credit of the Insurance Reserve would unquestionably represent an addition to profits which could be distributed as dividends. But so long as the company maintains its business and refrains from insuring, the Reserve is closely allied to a Depreciation account or a provision for bad debts. If the plant is sufficiently large and scattered the law of probabilities makes certain that a loss will some time occur. If an accurate estimate shows that there will be an average loss of $20,000 each ten years, it is clear that the accountant should charge $2,000 (ignoring the compounding of interest) as the share of such loss properly to be allocated to each year's business. And the accumulation of such charges is not so much a part of net profits as a representation of a loss logically anticipated but as yet unrealized.

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CHAPTER XIV

SINKING FUNDS

A SINKING FUND in the strict sense is a fund raised by annual contributions for the purpose of providing means for paying off a funded debt. The term is of very frequent occurrence in accounting, especially in the Balance Sheets of American railways. Its use is however not uniform, and an examination of a number of railroad reports will disclose some in which it appears only on the Liability side, others where it is found only among the Assets, and still others in which Sinking Fund appears both as a Debit and a Credit. The various methods in which this is done and the forms in which the transactions are booked are as follows:

1. A given sum of money is annually paid to Sinking Fund trustees or otherwise set aside to accumulate at compound interest until the time when the bonds mature. The payment is not regarded as a loss or an expense, which indeed it is not, for the payment of debt not being an expense certainly the preliminary setting aside of a fund with which to pay the debt is no more so. Assuming a road whose Balance Sheet shows:

FORM 98.

Dr.	*Balance Sheet.*	*Cr.*
Cost of road, etc.....	$99,000,000	Capital Stock $50,000,000
Cash.....	2,000,000	Funded Debt..... 50,000,000
		Balance of Income Account..... 1,000,000
	$101,000,000	$101,000,000

the payment to the Sinking Fund trustees of an installment of $500,000 produces the following condition:

FORM 99.

Dr.	*Balance Sheet.*	*Cr.*
Cost of road, etc..... $99,000,000	Capital Stock..... $50,000,000	
Cash in hands of Sinking Fund Trustees. 500,000	Funded Debt..... 50,000,000	
Cash..... 1,500,000	Balance of Income Account..... 1,000,000	
$101,000,000	$101,000,000	

In this case cash has been taken out of the general funds and put aside to provide means for the future payment of the bonds. There is no indication as to its relation to profits. The legal requirement by contract with the bondholders is that funds be thus set aside and separately held. So long as this is done it is immaterial to the bondholders whether the cash is obtained from the stockholders, from loans obtained elsewhere, or from accumulated profits. The Sinking Fund here is a fund of assets, analogous to a " bank reserve " and not a Reserve in the sense of reserved profits. This form is used, for instance, by the Chicago, Rock Island and Pacific.

2. Other roads are accustomed to charge the amount of the Sinking Fund installment to the Income or Profit and Loss account. In this case a distinct reserve is created by withholding part of the accumulated profits. Where this is done the Balance Sheet becomes:

FORM 100.

Dr.	*Balance Sheet.*	*Cr.*
Cost of road, etc..... $99,000,000	Capital Stock..... $50,000,000	
Cash in hand of Sinking Fund Trustees. 500,000	Funded Debt..... 50,000,000	
Cash..... 1,500,000	Sinking Fund..... 500,000	
	Balance of Income Account..... 500,000	
$101,000,000	$101,000,000	

which is the form used by the Chicago and Northwestern Railway, and many other corporations. The name given to the account varies somewhat in the different reports, but the essential thing is to note that a Reserve Fund, specially covered by cash in the hands of the trustees, has been established, and that both sides of the Balance Sheet show the amount of the Sinking Fund.

3. The other forms are variations of the two just given, and depend on the method of employing the funds paid to the trustees, and of booking the transactions. The purpose of the Sinking Fund being to provide means which shall serve to wipe out a given issue of bonds at a certain time, this end can be gained either by leaving the cash on deposit in a trust company, by investing it in outside securities, or by buying up some of the Company's own bonds. The first plan is objectionable because of the small rate of interest received, the second involves the possibility of risk, the danger of misappropriation of the large sums of securities held by trustees, and a relative low rate of interest, for the trustees will prefer bonds whose greater security means lower returns. Investment in the Company's own securities is therefore the most desirable as well as the customary method, and so far as practicable the bonds purchased are part of the very issue to be covered by the Sinking Fund. Here the question of security cannot arise, for the purchase of the bonds in itself secures the desired end; misappropriation can be prevented by canceling or by rendering the bonds otherwise non-negotiable; and the interest will be higher than could be gained by any investment of approximately equal security.

Where outside investments are made the securities held must appear in the Balance Sheet as part of the assets of the company, under the heading " Cash and securities held by Sinking Fund Trustees " or an equivalent phrase; but where bonds of the company are purchased different meth-

ods of booking the transaction are employed. Sometimes they too are included among the assets embraced in the heading just given, but in other companies bonds so held are not counted as assets, and are therefore necessarily canceled from the bonds listed among the liabilities. This is treating the bonds purchased for the Sinking Fund as a payment of a debt, and a debt paid as a rule no longer appears in the accounts. Assuming that the sinking fund has been invested in the company's bonds, and that these bonds are canceled, the Balance Sheets given above in forms 99 and 100 become respectively

FORM 101.

Dr.	*Balance Sheet.*		*Cr.*
Cost of road, etc.....	$99,000,000	Capital Stock.....	$50,000,000
Cash.....	1,500,000	Funded Debt.....	49,500,000
		Balance of income account.....	1,000,000
	$100,500,000		$100,500,000

FORM 102.

Dr.	*Balance Sheet.*		*Cr.*
Cost of road, etc.....	$99,000,000	Capital Stock.....	$50,000,000
Cash.....	1,500,000	Funded Debt.....	49,500,000
		Sinking Fund.....	500,000
		Balance of income account.....	500,000
	$100,500,000		$100,500,000

Illustrations of the above are found in the reports of the Louisville and Nashville Railway, which uses the form 101 so far as it concerns the bulk of its sinking fund payments, the uninvested balance appearing as a debit with no corresponding credit; and in the balance sheet of the United States Steel Corporation, given in Form 29, which shows a credit but no debit for the bulk of its sinking fund operations.

A comparison of the four methods shows that an item representing the sinking fund appears in the first form only among the debits, in the second in both debits and credits, in the third in neither debit nor credit, and in the fourth in the credit side alone. The creditors are given the security, in the first case, of certain segregated assets, but no assurance that the total assets of the company will be increased. In the second case the reserved assets at the same time constitute an increase in the total assets of the company, gained by a reservation of profits, or at least there is the guaranty that the stockholders take no dividends unless profits are first withheld sufficient to provide for repayment of the debt. In the third method no specific assets are withheld and the gross assets may even decline, but the outstanding claims are reduced so that the margin of security is increased. In the fourth there is a similar reduction in liabilities, but in this instance accompanied by a guaranty, not found in the third method, that the gross assets will at least be constant while the net assets are being increased by paying debts with profits.

The theory of the Sinking Fund involves the compounding of interest on the invested installments. Where outside investments are made this is simply done by leaving in the hands of the trustees the interest received. Where the company's own bonds are purchased it involves the payment of interest on the entire issue of bonds, including those held by the sinking fund, and regardless of whether these bonds are canceled and subtracted from the liabilities or not. This interest in either case is credited not to the general income of the company but to the Sinking Fund, from the investments of which the interest is derived. Thus assuming that the installment of $500,000 in the illustrations given above is promptly invested at five per cent., the Balance Sheet at the end of the year—ignoring other charges—is:

FORM 103.

Dr.	*Balance Sheet.*		*Cr.*
Cost of road, etc.....	$99,000,000	Capital.....	$50,000,000
Cash and securities in hands of Sinking Fund Trustees....	525,000	Bonded debt.....	50,000,000
		Sinking Fund and Accretions thereto.	525,000
		Balance of income account.....	500,000
	$101,025,000		$101,025,000

As the years pass the credit to " Sinking Fund and accretions thereto " and the " Cash and securities in hands of Sinking Fund Trustees " increase *pari passu* by the accumulation of compound interest on the several installments paid.

Much discussion has occurred in the field of both public and private finance as to the economic effects of adopting a sinking fund policy. Whether this indirect and rather cumbersome method of retiring debt is advantageous or not has been argued with great vigor, but with this discussion the present treatise is not concerned. Some purely accounting aspects of the subject are, however, of interest.

Sinking fund installments being in most cases compulsory under the mortgage, they are frequently treated as fixed charges, together with interest payments. An illustration is found in the reports of the Chicago and Northwestern Railway Company, which shows:

FORM 104.

Gross earnings		$55.7
Operating expenses and taxes.....		38.6
Net earnings		$17.1
Other charges:		
Interest	$7.0	
Sinking Funds.....	.2	7.2
		$9.9
Add other income.....		.5
		$10.4

On the other hand the Pennsylvania R. R. Company, obtaining its earnings in the customary way, subtracts interest, but not Sinking Fund installments, to obtain the Net Income, and from the Net Income are subtracted Contributions to Sinking Funds, Special Reserve, and Dividends, all three being treated as homologous items, each being an appropriation of Net Income, not a charge against Earnings.

From a theoretical view point the latter method is correct, the former erroneous. Payment of debt not being in any sense an expense or loss, it may be left entirely out of the Income Account as has been shown to be a recognized method of treatment; but it is also legitimate to provide for making such payments out of profits, just as provision for extending a fixed plant may legitimately be made by creating a Reserve; but in neither case is the essential nature of the transaction altered, and this is correctly reported in the accounts by showing it as a disposition of profits.

On the other hand may be cited the authority of M. M. Kirkman, Vice-President of the Chicago and Northwestern Railway, who says:

"Sinking fund is unrepresented capital. It is not chargeable against income account any more than any other capital expenditure. The reason why we so often find it included in the income account is because of the conservatism of proprietors. It is another way they have of strengthening their properties. It is similar in effect to making improvements with net earnings. The fact that it is done by sagacious and practical business men is, in itself, sufficient evidence that it is proper."[1]

But the analogy here given is not quite correct. In charging improvements to net earnings the item disappears entirely from the Balance Sheet and constitutes a

[1] Science of Railways, III, p. 104.

Secret Reserve. This is apparently never done in regard to the Sinking Fund. The payment does not disappear but is either held among the assets or what is equivalent is deducted from outstanding debt. The alternative, so far as the showing in the Balance Sheet is concerned, is between retaining an unappropriated Balance to Income and a Special Reserve, not between creating a secret and an open reserve. Charging to income reduces the unappropriated balance and doubtless lessens the clamor for extra dividends which might appear as that balance is augmented, but which would be less insistent where the amount appears as Sinking Fund. To charge to gross rather than to net income affects only the showing in current income accounts, not at all the cumulative sum in the Balance Sheet, but even the showing of the annual profits at a sum larger than can advisedly be distributed is at times embarrassing. While the net profits of the Chicago and Northwestern Railway were unquestionably larger than the amount shown, the amount of "Net profits available for dividends" were not larger. The compulsory nature of the Sinking Fund has some bearing, it is true, but neither national banks nor foreign corporations consider the compulsory establishment of a surplus a reason for understating the annual net profits, and they do not charge the required percentage of their profits as if it were an expense, but show it properly as an appropriation of profits. So the compulsory nature of the Sinking Fund, while lessening the amount which may be available for dividends, should not diminish the net profits shown. Even the decisions of the courts, that profits are ascertained after the payment of Sinking Funds (Belfast & Moosehead Lake Ry. *v.* Belfast, 71 Me. 445 (1885), Excelsior Water & Mining Co. *v.* Pierce, 90 Cal. 131 (1891)) like the similar decisions regarding the payment of the principal of the debt, are, as is shown in Chapter XII, to

be explained as a ruling against forcing dividends rather than as a scientific definition of the nature of profits.

The customary treatment of interest received on Sinking Fund investments is similarly inexact. The interest thus received is part of the income of the company. That it is immediately appropriated to a special purpose, does not alter its nature as income of the company. As such it might with propriety, indeed it logically should, appear in the Income account. But in practice, where the Sinking Fund appears as a special reserve, the income derived from its investment is not shown in the Income account but is credited direct to the fund or to some subordinate account as for instance "Sinking Fund Accretions." Thus again the showing of annual profits is too low, although the Balance Sheet does show in full the reserved profits held in the Sinking Fund.

In the normal course, when the time comes for the retirement of the bonds covered by the Sinking Fund, the credit to that account should equal the amount of bonds. Where the specific investment of the funds is shown, the Balance Sheet becomes:

FORM 105.

Dr.	*Balance Sheet.*		*Cr.*
Cost of road, etc.....	$99,000,000	Capital Stock	$50,000,000
Cash, etc., in hands of Sinking Fund Trustees	50,000,000	Funded Debt.....	50,000,000
		Sinking Fund.....	50,000,000
Cash.....	1,500,000	Balance of Income Account	500,000
	$150,500,000		$150,500,000

At this point the bonds are presented to the trustees of the Sinking Fund and paid by them. The Balance Sheet then becomes;

FORM 106.

Dr.	*Balance Sheet.*	*Cr.*
Cost of road, etc..... $99,000,000	Capital Stock $50,000,000	
Cash..... 1,500,000	Sinking Fund (?).... 50,000,000	
	Balance of Income Account 500,000	
$100,500,000	$100,500,000	

It perhaps seems unreasonable to continue the Sinking Fund under that title, now that the debt has been redeemed and canceled. The entire sum could with propriety be credited back to Income Account, whence it all originally came. To most accountants, however, it appears better to continue it as a special reserve, perhaps under some such descriptive title as that proposed by Dicksee "Accumulations of Revenue which have provided the wherewithal to Redeem Loans," or so far as accounting is concerned, it can legitimately be capitalized, and a stock dividend issued for it to the stockholders. Economically it means that by a period of prolonged abstinence the stockholders, formerly having only a half interest in the economic capital, have bought out the bondholders' interest of $50,000,000, making payment out of their accumulated profits or savings.

Where the Sinking Fund is invested in the bonds of the company and such bonds are canceled and disappear from the Balance Sheet (the method shown is Form 102 above), the final condition will be the same as that in Form 106.

Where no special Sinking Fund is shown among the liabilities the final payment of the debt does not require any further alteration of the Balance Sheet, for the payment of bonds, either gradually or in mass has not been charged against income, and there is no need for reëstablishing that depleted account.

The calculation of the amount required for a Sinking Fund is as follows. The problem being the amount payable at the end of each year, which invested at a given rate of interest (i) will be sufficient to pay off the principal (P) in (n) years. In this calculation the interest annually paid on the bonds is neglected, that being a regular charge against the earnings of the company, the Sinking Fund installment being separately handled.

A payment of $1 invested at the end of the first year will accumulate at compound interest until the end of the sinking fund period of n years. Its accumulated value will therefore be $(1+i)^{n-1}$, the second installment will accumulate for one less year and so on, for a series, the next to the last installment drawing interest for only one year, the last installment made at the time when the bonds mature, not having any time for investment. The series then becomes

$$(1+i)^{n-1}+(1+i)^{n-2}\ldots(1+i)+1,$$

which may be simplified to $\frac{(1+i)^{n}-1}{i}$. Dividing the total amount of bonds to be retired (P) by this sum, the amount of the annual sinking fund installment is obtained, and

$$\text{Sinking Fund Installment} = \frac{iP}{(1+i)^{n}-1}$$

In these calculations the accountant and the investor must have in mind that there is bound to be some delay in reinvestment and that the rate to be obtained is almost certain to decline through any protracted period.

It is however by no means necessary that the Sinking Fund should equal the entire principal to be retired. A provision which amounted to eighty, sixty, or any other considerable proportion of the funded debt would in the

case of a perpetual enterprise, such as a railroad, offer security sufficient to satisfy the creditor; for if to-day the road can borrow $100,000,000, the presumption is that twenty years hence it will have no difficulty in borrowing half that sum, if it should prove necessary to refund the debt not covered by the Sinking Fund. Where the enterprise is not perpetual, as where it is dependent on a limited franchise, the adequacy of the Sinking Fund provision is more important and the failure to realize the calculated interest may be a decided injury to the bondholder.

The relation of the Sinking Fund to Depreciation has led to protracted discussion, especially in connection with the legal restrictions on municipal borrowing. The English requirement is that the municipality, desiring to borrow for public service utilities must provide out of the revenue both for a Sinking Fund with which to retire the bonds at maturity, and also for a Depreciation Fund with which the plant can be replaced when worn out. But assuming that the life of the plant and the duration of the bonds are the same this leads to an exact doubling of the proper charges against revenue. Whatever good effect this may have in preventing reckless undertaking of municipal enterprises, it clearly does not lead to a correct showing of the profitableness of the undertaking. The relation between Sinking Fund and Depreciation is better understood by accountants. Thus for instance the certificate of the Public Accountants attached to the Balance Sheet of the American Hide and Leather Company contains the following: "The appropriation out of profits for the purposes of the Sinking Fund is in our opinion, sufficient to take the place of provision for Depreciation."

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CHAPTER XV

TRADING, MANUFACTURING AND INCOME ACCOUNTS

THE profits of a year can be accurately shown without an elaborate set of books, all that is necessary being a carefully prepared annual inventory. The herdsman telling the tale of his sheep, the miser counting over his hoard, compares the figures of a preceding period and learns what has been his annual increase. The contribution which double entry bookkeeping has made to accounting science is largely that it has introduced a separate Profit and Loss account which, though it may not show the net results any more accurately, does present them in greater detail. Even the simpler forms of the Profit and Loss account exhibit such details as the gain from merchandise, the amount of expenses, the interest paid or received, wages, rent, and other sources of profit and lines of expense. With greater complexity of business organization there comes a demand for a more logical, or at least a more practical classification of Profit and Loss items. Accounting practice of to-day subdivides the old Profit and Loss account into several sections or even into separate ledger accounts which not merely show the total profits, but group the items so as to exhibit the results of each of the parts or processes which are embraced in the operations of the business. The Trading Account, the Manufacturing Account and the highly developed Income or Revenue account of railroads are differentiations of the simple Profit and Loss account and are appropriately discussed in this place.

The Trading account, as the term is ordinarily used, is

a technical device whereby it is sought to differentiate the elements of gain caused directly by trafficking, from that which a mercantile establishment derives from other sources. At the outset the student is confronted with the difficulty that here, as elsewhere in accounting, terminology is but partly crystallized and the words are used loosely and with divergent connotation. Even yet it is difficult to say whether the Profit and Loss account is a comprehensive statement of which the Trading account is one part, or whether they are separate accounts, or whether one should rather speak of a Trading Section and a Profit and Loss Section of a not definitely named, all-embracing statement of the results of the business. Furthermore while there is general agreement that the Trading Section —if so it be called—should logically be separated from other exhibits of Profit and Loss, there is no agreement as to just what items should be included in that exhibit. These confusing differences are best illustrated by discussing a sample form, that given by Lisle in his " Accounting " being particularly elaborate may be used as the basis of comparison. The form with only a few verbal changes is given on pages 276–277.

It should be noted first, that while the statement as a whole is called the Profit and Loss account, yet the second, third and fourth sections are specifically Profit and Loss accounts in contradistinction to the first section called Trading Account. Other accountants make a wider separation between the first and the subsequent sections, and apply Profit and Loss account only to the latter group. Again variance is found in the subdivisions made after the Trading Account. Lisle gives three subdivisions, one showing business transactions, with a balance " Profits on ordinary business "; the second containing those entries which relate to the investment of capital, with a balance " Net Profits "; the last giving the allocation of profits.

FORM 107.

Profit and Loss Account.

Dr. 1ST SECTION—TRADING ACCOUNT. *Cr.*

To Cost of goods used (including freight inward and after deducting purely trade discounts)..	By Sales (after deducting purely trade discounts)
" Expenditure directly connected with sales or which reduces the price realized for the goods such as:	
Commission and salaries of travelers and travelers' expenses..	
Wages of salesmen....	
Wages of porters.....	
Outgoing freight.....	
Cash discount allowed on sales.....	
" Balance carried down being gross profits.....	

2D SECTION—ORDINARY BUSINESS PROFIT AND LOSS ACCOUNT.

To Fixed Charges not directly connected with sales and not varying much with the turnover such as:	By Balance brought down being Gross Profits ....
Rents, taxes, etc.....	" Income not directly connected with sales such as
Repairs and other office expenses.....	Rent of stores or premises let to tenants...
Salaries of office staff and management...	Revenue from royalties
Depreciation.....	
" Business losses such as:	
Bad debts	
Defalcations.....	
" Balance carried down being Profit on ordinary business.....	

3D SECTION—THE NET PROFIT ACCOUNT.

To Expenses connected with Capital, such as: Interest on loans..... " Balance carried down, being Net Profit.....	By Balance brought down being Profit on ordinary business..... " Income connected with capital such as: Revenue from investments..... Interest earned..... Cash discounts obtained which depend on the amount of capital in the business.....

4TH SECTION—THE PROFIT AND LOSS APPROPRIATION ACCOUNT.

To Allocation of Profit: Interest on capital.... Profit allocated to capital..... " Profit unappropriated, carried forward.....	By Balance brought down being Net Profit .....

So minute a subdivision of the Profit and Loss account as that shown above is rarely found in accounting practice. Frequently there is no distinct separation into parts. A grouping of the items in an inner column, and the introduction of subtotals in the main column enable one to pick out the facts which by Lisle are more formally presented by the actual balancing of the various sections. It cannot be said that there is any universally recognized form; indeed there should not be, for a system of accounting must be flexible, not tied down to any set formula, if it is most clearly to present the facts essential to the under-

standing of a particular establishment. This is well recognized by accountants, for not only do the forms used by other authors differ from the one presented above, but a glance through Lisle's most valuable book shows that of the dozen forms of Trading and Profit and Loss accounts which he gives, no two are identical in nomenclature, subdivision and grouping of individual items.

FORM 108.

Gross earnings (whether sales of products, transportation earnings, professional earnings, etc.)		$.....
Deduct—Cost of Manufacture or Operation:		
(*a*) Manufacture (for a manufacturing concern)	$.....	
Labor	.....	
Material	.....	
General Manufacturing Expenses	.....	
(*b*) Cost of Operation (for concerns not manufacturing) (Under suitable headings according to the nature of the business)	$.....	$.....
Gross Profits		$.....
Other Earnings		.....
Deduct—		
Expenses of sale (manufacturing business only)	$.....	
Expenses of management (if distinct from operation)	.....	
		$.....
Net Profits from Operation		$.....
Deduct—		
Interest on Bonds	$.....	
Other Fixed Charges	.....	
		$.....
Surplus for year		$.....
Extraordinary Profits (detailed)		.....
Surplus brought forward from preceding year		.....
		$.....
Deduct—		
Extraordinary charges not applicable to the operations of the year	$.....	
Interest and Dividends on Stocks	.....	
		$.....
Surplus carried forward		$.....

A simpler form, suitable for general application is that suggested by Mr. A. Lowes Dickinson at the Congress of Accountants, and given on the preceding page.

The Manufacturing account is a further amplification of the Trading account of concerns which manufacture, rather than purchase, part or all of their stock in trade. The Trading account includes as its first item the cost of purchased merchandise; where merchandise is manufactured the manufacturing account gives a detailed exhibit of the manufacturing cost of the commodities, which are then entered in the Trading account and subsequently treated just as if they had been purchased. Difficulties exist in determining what items belong in the Manufacturing Account similar to those confronting one who forms a Trading Account. In both cases divergencies in practice rightfully occur.

An example of a manufacturing account is as follows:

FORM 109.

Manufacturing Account.[1]

All direct cost of Manufacturing such as:	All reductions in cost of manufacturing such as:
Raw materials.....	Discounts on Purchases.
Labor.....	Inventories.....
Superintendence.....	Balance to Trading Account, representing Manufacturing Cost of goods sold....
Packing materials.....	
Heat and Power.....	
Factory expenses.....	
Freight (inward).....	
Cartage (inward).....	
Insurance on Plant	
Depreciation, Machinery and Tools	
Reserve for Taxes on plant.....	

[1] For the above form the author is indebted to Mr. E. P. Moxey, Jr., C.P.A.

The Income or Revenue Account of a railroad is identical with the expanded profit and loss statements already described, so far as the difference in the business transacted permits. Two forms for such an account are given below:

FORM 110.

Income Account.

Gross earnings from operation		
Less operating expenses		
Income from operation		
Deficit		
Dividends on stocks owned		
Interest on bonds owned		
Miscellaneous income		
Income from other sources		
Total income		
Deficit		
Deductions from income:		
Interest on funded debt accrued		
Interest on interest-bearing current liabilities, etc.		
Interest on real estate mortgages		
Rents paid for lease of road		
Taxes		
Permanent improvements		
Other deductions		
Total deductions from income		
Net income		
Deficit		
Dividends, —— per cent, common stock		
Dividends, —— per cent, preferred stock		
Other payments from net income		
Total		
Surplus from operations of year ending June 30, 1907		
Deficit from operations of year ending June 30, 1907		
Surplus on June 30, 1906 [from "General balance sheet," 1906 Report]		
Deficit on June 30, 1906 [from "General balance sheet," 1906 Report]		
Additions for year		
Deductions for year		
Surplus on June 30, 1907 [for entry on "General balance sheet"]		
Deficit on June 30, 1907 [for entry on "General balance sheet"]		

FORM 111.

Income Account.

Gross operating revenues.....
Operating expenses.....

Net operating revenues—Credit.....
Debit.....
Taxes.....

Net operating revenues, less taxes—Credit.....
Debit.....

Outside operations—net credit balance.....
Rents accrued—net credit balance:
(*a*) Hire of equipment.....
(*b*) Joint facilities.....
(*c*) Miscellaneous.....
Rents received for lease of road.....
Operations of subsidiary lines—net credit balance..
Interest and dividends received:
(*a*) On stocks owned.....
(*b*) On bonds owned.....
(*c*) On sundry securities, bills, etc.....
Miscellaneous income.....

Gross corporate income.....
Outside operations—net debit balance.....
Rents accrued—net debit balance:
(*a*) Hire of equipment.....
(*b*) Joint facilities.....
(*c*) Miscellaneous.....
Rents paid for lease of road.....
Operations of subsidiary lines—net debit balance..
Interest accrued on interest-bearing current liabilities.....
Interest accrued on funded debt.....
Sinking-fund accruals.....
Other deductions.....

Net corporate income over fixed charges—Credit balance
Debit balance

Disposition of corporate income:
Dividends declared—
(*a*) On common stock —— per cent...
(*b*) On preferred stock —— per cent....
Appropriations to reserves.....
Additions and betterments.....
Miscellaneous.....

Balance carried to credit of profit and loss for year....
Balance carried to debit of profit and loss for year....,

Profit and Loss Account.

	Debit.	Credit.
Balance June 30, ——.....		
Balance forward from income account.....		
Miscellaneous additions for year:		
.....		
.....		
.....		
.....		
Total additions for year.....		
Dividends declared out of surplus:		
(*a*) On common stock—per cent.....		
(*b*) On preferred stock—per cent		
Miscellaneous deductions for year:		
.....		
.....		
.....		
.....		
Total deductions for year.....		
Balance on June 30, ——, for entry on balance sheet.		

The first of the above forms is one frequently used by American railroads, the second is an improved form suggested by the Interstate Commerce Commission.

Here again there is divergence in the use of technical terms, particularly in regard to the names applied to the successive balances which appear after subtractions have been made. The item called " Income from Operation " is by many roads called " Net Earnings." The item " Net Income " is variously called " Available for dividends," " Balance over fixed charges," " Surplus " or even left altogether unnamed. Nor is there agreement as to the section of the account into which certain items should be placed, particularly Depreciation and Taxes.

In discussing the variations in practice one ruling principle is to be kept constantly in mind. The form of the Profit and Loss statement should be adapted to the needs of the individual establishment and cannot be prescribed by any hard and fast rules. Its purpose being to give a better insight into the operations of the establishment to

the end of enabling the managers to limit waste and prevent unprofitable ventures, the subdivisions to be made and the decision as to the particular section into which any one item should appear, turn largely on the particular information which the management desires to secure, and on the business and physical organization of the plant itself. Thus, for instance, of two manufacturing establishments one may be considering the relative desirability of increasing its plant or of purchasing, from other manufacturers, part of the goods it sells. The other, having no opportunity to purchase the finished commodities, might, however, consider whether it is better to continue its sales department or to turn its entire product over to some jobbing or commission house. In the first case it is desirable to show the exact cost of manufacture, to compare it with the price at which goods can be purchased elsewhere; in the other the point of emphasis is the cost connected with selling. It is quite conceivable that the system of accounting which best brought out one set of figures would not most economically give the information desired in the second establishment.

Again, the nature of the organization itself is a factor in determining the form of accounting. The separation or juxtaposition of the factory and the office, the location of the warehouses at one or the other place, the degree to which the labor of employees is specialized, and the number of branch establishments are all examples of facts which enter into the question of the proper grouping of items. What is desired is to be able to put the finger on some point and say, "Here there is relative inefficiency." If manufacturing is distinct from trading, the separation of the two in the accounts seems to facilitate the localization of responsibility; if the two are combined, but there are separate plants each manufacturing and selling, the line of cleavage is evidently different. As in all account-

ing matters, while certain general principles hold good, the main difficulty is their application to a particular problem which must be individual and perhaps unique.

Keeping clearly in mind the limitations of the preceding section the points of more general interest may still be discussed. 1. The first problem relates to the valuation at which manufactured goods are to be carried down to the Trading section, where these sections are kept separate.

Two distinct principles are advanced on this point. The first is that the manufactured goods should be carried down to the Trading Account at the net manufacturing cost. This is shown in Form 109. The other is that goods should be transferred from the Manufacturing Account to the Trading Account, not at the actual cost but at a fair market price, that is, at the figure which would have been paid had the goods been bought from some other manufacturer instead of being produced within the establishment. In favor of the latter view it is urged that by so doing a distinct showing is made of the profits which result from efficient manufacturing, as distinguished from the profits which arise from skillful trading.

FORM 112.

Dr. *Manufacturing Account.* *Cr.*

To Costs	$100,000	By Trading Account	$110,000
" Manufacturing Profits	10,000		
	$110,000		$110,000

Dr. *Trading Account.* *Cr.*

To Merchandise at Trade Price	$110,000	By Sales	$145,000
" Expenses	15,000		
" Trading Profits	20,000		
	$145,000		$145,000

This may be illustrated by assuming a manufactory which produces, at a net cost of $100,000, goods for which the current wholesale price is $110,000; and that these goods are sold at $145,000, with trading expenses of $15,000. If the manufactured goods are carried to the Trading Account at the market rather than at the cost price, the accounts appear as on the preceding page.

This exhibits Manufacturing Profits of $10,000 and Trading Profits of $20,000, while if the merchandise had been brought down at the cost of manufacture there would be shown only a single item of profit of $30,000.

The advantage of distinguishing between the two elements of profit is indisputable, especially where the concern purchases part and manufactures part of the merchandise which it sells. But in so far as the goods are not all sold during the year in which they are manufactured, there is the great objection that there is introduced into the accounts an unrealized and perhaps fictitious profit on

FORM 113.

Dr.	*Manufacturing Account.*		*Cr.*
To Cost of manufacture..	$100,000	By Trading Account at market price.....	$110,000
" Manufacturing Profits	10,000		
	$110,000		$110,000

Dr.	*Trading Account.*		*Cr.*
To Manufacturing Account.....	$110,000	By Sales.....	$72,500
Less stock on hand...	55,000		
" Cost of goods sold....	$55,000		
" Expenses.....	15,000		
" Trading Profits.....	2,500		
	$72,500		$72,500

the unsold portion of manufactured goods. This is illustrated by assuming that only one half of the manufactured goods are sold for $72,500. Where goods are carried down to the Trading Account at cost there will be shown Net Profits of $7,500. But where goods are brought down at the market price the accounts will appear as in Form 113, giving a total profit of $12,500 instead of only $7,500. The difference, of course, is due to taking credit in the latter method for $5,000 profits on the unsold half of the product.

The problem here is the same one that arises when inventorying any merchandise, namely: Shall stock on hand be taken at cost or at market price? As has been shown in Chapter V, the taking of a higher market price is generally condemned as opening the doors to imaginary profits. The criticism applies to the taking of an assumed manufacturing profit as well as to the profit taken on still unsold merchandise purchased. But there is a real advantage in showing the manufacturing as distinct from the trading profits, in that it gives information which serves as a guide for future management. And the objection to showing the unrealized profit may not be conclusive, for it is possible to put the profits thus shown into a special reserve, thus removing them from the sum available for dividends and lessening the danger of overvaluation. As has been shown, valuation at the present market price is in reality the logical course in accounting, but in ordinary cases logical consistency is sacrificed as a practical expedient to prevent overvaluation. In treating the Manufacturing Account, the real advantage of distinguishing the part of the profits derived from manufacturing is so great as to lead many accountants to return to the logical scheme of valuation, elsewhere abandoned from motives of conservative prudence. This is recommended by both Dicksee and the "Encyclopedia of Accounting." It is a case

where advantages are to be weighed against dangers, with the additional complication of logical principles pulling against consistency of treatment.

2. A second problem relates to the items to be included in the Trading Account. Ignoring variations in mere detail, two divergent customs are found. One includes in the Trading Account all the expenses connected with trafficking as distinct from the general expenses of management. This is the principle applied in Lisle's form given above, Form 107, where commissions and salaries of traveling salesmen, wages of salesmen, wages of porters, etc., are charged to the Trading Section. The second more rigid method excludes from the Trading Account all items except those representing the direct cost price and the net selling price of the goods handled. The balance then carried down is generally called Gross Trading Profits, although, strictly speaking, the term is incorrect and the balance itself is of no great logical significance. Properly it is not profits, but merely the sales less some, but not all, of the cost or expense of making the sales. Nevertheless there are advantages in making a comparison of cost and selling price as these figures lend themselves conveniently to statistical results. A merchant generally bases his selling price on the cost price, either adding a given percentage, or by fixing it so that difference between cost and selling price is a percentage of the latter. Thus, where merchandise is bought at $1.20 a yard, the price may be fixed so as to yield, say, 25 per cent. " profit," or otherwise expressed so that 20 per cent. of the selling price will be gross profit, that is, at $1.50. Basing the selling price thus on the prime cost is almost a necessity, for the trading expenses are not known when the price is fixed, while the cost is easily ascertained through the invoices. The keeping of the accounts thus somewhat parallel with actual business processes has practical advantages. But a glance

at the various forms used by accountants shows at once that practice is far from uniform.

If items other than the direct costs are to be included in the Trading Account the criterion by which selection is to be made offers new difficulty. The one frequently followed is to include only those expenses which are at least roughly proportionate to the amount of goods sold. But this line of division is most vague, and custom, while including wages of salesmen and commissions to travelers, excludes the wages of bookkeepers, which equally may vary with the amount of business transacted.

3. What constitutes selling price is another problem, for at times it is difficult to determine whether a given charge is a deduction from the selling price or a part either of the selling or of the general administrative expenses. The discounts allowed on sales come under this class of doubtful items. Custom seems to favor deducting from the sales the trade discounts, that is, those deductions conventionally allowed to dealers from the nominal selling price. On the other hand, the discount allowed for an early payment of the account, according to Lisle, should not be deducted from sales, but be treated as is interest and discount paid the bank, that is, as a cost of obtaining the needed working capital. Thus it results that the difference between the nominal selling price and that actually received may appear in either one of three sections of the Profit and Loss statement; in the first as a deduction from sales, in the second as a selling expense, or in a subsequent one as the cost of borrowed capital.

4. Of greater theoretical, but of less practical interest is the location of taxes. This is shown clearly in the case of railroads. Some roads, as for instance the Southern Railway and the Illinois Central, treat taxes as being coordinate with Operating Expenses and deduct them from Gross Earnings. Others treat them as fixed charges, simi-

lar to interest, and deduct them from the Net rather than from the Gross Earnings. The revised form proposed by the Interstate Commerce Commission makes a special division for taxes, as is shown in form 111, and still other accountants argue that taxes should be treated as part of the Net Profits.

It is impossible to say that any one of these views is absolute and exclusive. Perhaps even the system of taxation may influence the decision as to the proper treatment of taxes in accounts. A strong argument can be made in favor of the view that taxes are really a part of profits and not a deduction from earnings to be made before determining profits. In so far as the stockholder is concerned it turns on two facts: whether the taxation of the road exempts the stockholders from other taxation; and whether the capitalist would escape taxation on other investments. If the stockholder has his dividends lessened by the taxes paid, but in all probability would pay no taxes were his funds invested, say, in bonds or mortgages, the taxes are, from his point of view, in no sense a distribution of profits. But where there is an income tax uniformly enforced, and the payment of taxes by the road works merely as a stoppage of that part of the income, it is not illogical to consider the tax as a distribution of part of the Net Profits derived from operating the road.

5. Of much greater importance is the treatment of depreciation. In a preceding chapter it was shown that depreciation, despite conflicting usage and authority, is a charge which should invariably be made. Here the question is as to the section of the Profit and Loss Account—using the title in its broadest sense—in which depreciation should appear. Almost all possible combinations are found even in the relatively few accounts in which depreciation shows at all. In some few cases it is subtracted from Gross Earnings, and thus, like expenses, is prior to the

determination of Net Earnings. This is done for instance by the National Biscuit Company. By some, for instance the Chicago City Railway Company, it is even distinctly included among the expenses. Much more frequently it is subtracted from Net Earnings, in which place it may rank along with dividends or may be regarded as one of the fixed charges; since in many accounts fixed charges, depreciation, dividends, and reserves are all together subtracted from "Net Earnings" without any intermediate balancing to indicate how much of the net earnings are at the same time "Net Profits." An example of this treatment is found in the accounts of the International Mercantile Marine Company. In still other companies the deduction is clearly made from what is called Net Profits, that is, it is deducted, together with dividends, from the balance remaining after fixed charges have been met. This is done by the Republic Iron and Steel Company. And finally the Diamond Match and numerous other companies subtract depreciation from the surplus after the dividends have been paid. Depreciation charges are thus variously regarded as partaking of the nature of expense, of fixed charges, of profits reserved or placed in a surplus. In railroads depreciation has almost never been specifically allowed. The recent ruling of the Interstate Commerce Committee referred to above demands, however, that it be included, at least so far as equipment is concerned, among the operating expenses.

Those who have followed the argument of this treatise will agree that it is a radical error to treat depreciation as anything else than a deduction to be made before profits are ascertained, and that, allowing for variations in the use of terms, it must inexorably appear in the Income Account before the balance called Net Income is reached. But so far as shown by the published accounts only about one third of the corporations making any allowance for de-

preciation deduct it before obtaining the sum which—by whatever name it is called—is apparently available for dividends. The strong position taken by the Interstate Commerce Commission is theoretically correct, for depreciation is really an expense. In the formal statements of manufacturing concerns depreciation of the plant should appear in the Manufacturing Account, the depreciation of office and store equipment in the Trading Account rather than among the fixed charges as a deduction from Net Earnings.

Even to treat depreciation as a fixed charge, though that is a great improvement over regarding it as an optional disposition of profits, is illogical. Depreciation represents an expense not only preceding profit to the stockholders as such, but prior also to the earnings on the invested capital as a whole, whether that capital is represented by bonds or stock. Whether a road costing $100,000,000 is financed by issuing $100,000,000 stock, or by issuing only half that sum in stock and an equal amount in bonds, the invested capital (using capital in the economic, not in the accounting, sense) is the same, and the earnings of that investment should appear the same in the Income Account. No change of form of capitalization affects these earnings. Interest charges may increase, but the earnings *ceteris paribus* remain unchanged. But not so with depreciation. A smaller charge shows indeed larger apparent earnings, but such a showing is false and deceptive. Depreciation, therefore, is not logically to be treated as coördinate with interest charges.

It is even more erroneous to treat the fixed charges as superior to depreciation. Unquestionably there is an insistence about interest charges which appeals to the directors in a way in which a charge erroneously called a "mere bookkeeping charge" is not regarded. But the compulsion to make a payment has nothing to say regard-

ing the position of the charge in the Income Account. Needed repairs may, perhaps, be deferred for years, while the payment of a collateral note is imperative and unavoidable. But the inclusion of repairs among expenses is never even questioned, while the payment of a note has no place whatever in the Income Account, does not in the least affect the determination of profits. A sound system of accounting will therefore not make depreciation subsequent to fixed charges merely because of the imperative nature of the latter payments.

Finally placing depreciation charges after net profits is not only incorrect in theory, but tends to the vicious policy of making the amount of depreciation depend on the amount of profits and of omitting it altogether when there are no net profits against which it may be charged.

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CHAPTER XVI

COST ACCOUNTS

THE desire to distinguish between the elements of profit due to industrial and commercial activities respectively led to the formulation of the Manufacturing and Trading Accounts. The stress of modern business and the keenness of competition make necessary a more minute analysis and a closer estimate. Not only must it be known what are the manufacturing costs as a whole, but these must be so analyzed as to indicate the cost of each commodity, of each process employed in production, even of each part, minute though it be, of which the commodity is composed. Systems designed to secure such information are known as Cost Accounts.

The attention given to such investigations is of recent origin. The first reference to its desirability is said to be that of Charles Babbage in his "Economy of Manufacture," published in 1832, but half a century elapsed before factory managers began on any extended scale to introduce systems of Cost Accounts. Since then increased attention has been given to the subject, particularly under the influence of engineers, to whom, rather than to professional accountants, the credit of inaugurating and developing cost accounting is perhaps due.

More specifically the purposes of cost accounting are as follows:

1. To indicate the probable actual cost of production so as to enable the manufacturer to determine the price at which he can profitably sell. This is particularly impor-

tant in engineering work where so much is done on contracts rather than by producing stock goods for the open market. Thus, for instance, a system of cost accounts, accurately kept, should enable a shipbuilder to give an estimate of the cost of constructing a vessel which would be something more than guesswork.

2. Identical in principle is the value of cost accounts in indicating whether the manufacturer shall produce goods for the open market where the price is already fixed by competition. Without such information manufacturers have undoubtedly continued to produce and sell certain lines of goods which, at least to them, were unremunerative and a source of loss. Perhaps the market price is fixed by some competitor whose peculiar advantage in production gives profits at prices unremunerative to less favored rivals; or perhaps the price is due to ignorance on the part of the competitors who are themselves selling at a loss while fancying that they are making profits. A clear understanding as to whether the manufacturer can produce so as to realize a fair profit at current prices is of advantage not merely to the individual, but also to society, as it serves to prevent the misdirection of capital and the great loss which occurs when readjustment becomes necessary.

3. Cost Accounts have a further advantage in determining the advisability of introducing a new process, or of substituting machine for hand labor. They have shown, for instance, that it is profitable to run a drill so rapidly as to wear it out in a single day, although at a slower speed it would have drilled twice as many holes before destruction. They show at what prices of machinery and of skilled labor it is profitable to substitute an automatic machine in a process which can interchangeably be performed by a skilled laborer on a less costly machine. Thus throughout the industrial process Cost Accounts substitute

facts and intelligence for the rule of thumb and blind guessing.

4. Finally, Cost Accounts furnish a convenient method for checking the efficiency of factory management. If it appears that the cost of producing a given form of pinion has increased, it enables the manager at once to locate the cause. It may be that the change is unavoidable, due to higher cost of raw material or higher wages. But, on the other hand, investigation may show carelessness on the part of the foreman, and ill-advised redisposition of labor, or wastefulness in the handling of material—evils which are already far on the way toward correction when once their existence is shown. Slight losses of this kind may well escape attention if only general results are studied; or the losses in one department may easily be offset—but by no means canceled—by a new economy elsewhere. The subdivision of accounts makes it more easy to detect changes, and gives a constant incentive to foremen and superintendents to reduce costs.

The discussion of Cost Accounting is rendered more difficult by the rather vague and varying terminology employed. There are many different costs depending on the point of view. The terms used to designate these differing costs—Prime Cost, Factory Cost, Total Cost, etc.—are not uniformly defined either by economists or accountants. This may be illustrated by the case of a factory which desires to learn the cost of producing, say, a pair of shoes. To produce this the following factors are involved: (1) The raw material used. (2) The wages of the laborers directly employed in making the shoes. (3) The expenses of operating the factory as a whole which are not particularly assigned to this pair of shoes, as for instance the wages of watchmen, the repairs on the building, the cost of the power used for various purposes, etc. (4) The expenses of the establishment outside of the factory. (5) More questionably the

normal rate of profit, whether separated or not from the normal rate of interest on invested capital. In a broad sense profit is a necessary cost of the permanent continuance of the industry; for, if normal profits are not secured, new factories will not be started, and an adjustment of prices will be ultimately secured whereby profits as well as wages will be covered by the selling price.

By some writers the first and second items mentioned above are collectively called Prime Cost, while the first three items together make up Factory Cost. Other writers use Prime Cost to indicate the same as Factory Cost just defined, and these employ no specific term to indicate the sum of the cost of material and labor directly employed. The sum of the first four items is sometimes called Total Cost, sometimes "Cost to make and sell." Accountants universally exclude profits from cost, but use as a comprehensive term, including all five items enumerated above, the phrase "Selling Price." In addition to these differences in terminology there is divergence in regard to the treatment of certain particular items, such as interest, rent, taxes, etc., involving the principles discussed in Chapters IV and XV.

Without attempting to decide between the various usages, each of which has the support of high authority, and no one of which therefore can be declared wrong, the real problem may be faced, namely: What share of the total expenses, covering as they do the production of various commodities, is to be assigned to the cost of some one commodity, or to some single process? As to the first two items, wages and material, there is no doubt as to the principle and little difficulty in practice. The material actually used and the wages of laborers directly employed in producing the given commodity are obviously an integral part of the cost of producing that article. The connection is so clear that the use of the phrase Prime Cost seems in

a measure to be justified in describing these two fundamental and easily ascertainable elements of cost.

The first point of difficulty comes in attempting to distribute the indirect factory costs among the various commodities produced. Various principles are used, among which may be mentioned the following:

1. The indirect factory expenses, which include such items as wages of workmen employed in general labor such as watchmen, cleaners, firemen, etc., the wages of foremen and superintendents, light, heat, rent, and repairs of factory and its equipment, depreciation, etc., are apportioned among the various jobs or processes in the proportion which in some particular exists between the given job and the total operations of the factory. But the basis on which the comparison is made is variously chosen, and it may rest either on

a. The direct wages paid.

b. The hours of labor spent.

c. The material used.

d. The direct wages paid plus the cost of material. (Prime Cost.)

e. The units of product.

Other bases may also be taken, and one of them, the Machine Rate, is reserved for further discussion, but the five mentioned above are those most generally used.

Taking, as purely arbitrary figures, those given below in Form 114, it is seen that each of the methods may produce quite different results, the figure in the last column indicating the amount of the total indirect factory expenses of $12,000 to be apportioned to the particular job on each of the five bases of distribution mentioned.

Doubtless in actual practice the divergence in results reached by the different methods would not be so great, as in the figures given below. But it is clear that unless all work is of a practically uniform character the costs

obtained must vary according to the basis of distribution selected. Unfortunately for scientific accuracy it is impossible to pick out any one of the methods named as being logically correct or uniformly accurate. The first one, which distributes factory expenses in proportion to direct wages paid, is probably more frequently used than any of the others. It is, however, obviously incorrect where there is great divergence in rates of wages paid, or where there is a difference in the degree in which automatic machinery is used in the various processes. But it is simple of application, and this fact in itself probably explains its more general use.

FORM 114.

BASIS USED	In Entire Factory	On this Job	Apportionment
(*a*) Wages paid	$24,000	$100	$50.00
(*b*) Hours of labor	60,000	400	80.00
(*c*) Material used	16,000	50	37.50
(*d*) Wages plus Material	40,000	150	45.00
(*e*) Units produced	400,000	4,000	120.00

Distribution in proportion to hours rather than to cost of labor is favored on the ground that much of the indirect cost, such as foremen's wages, light, heat, etc., is dependent on the hours of work, and that other general charges, such as rent, depreciation, etc., have a direct relation to time. But its critics point out the fact that it makes the same charge upon the labor of a boy running a fifty-dollar machine that it does on that of a man with a thousand-dollar machine, "the grotesqueness of which procedure will not be enlarged upon." Apportionment of indirect factory expenses on the basis either of material or of the sum of wages plus material has the obvious objection that there does not seem to be any logical connection between an increase in the cost of material used and

an added charge for indirect factory costs. Apportionment in proportion to the units of product may be most convenient of application in certain kinds of production, and is frequently used in foundry practice, the ease with which this system is used being held to more than offset any theoretical objection on the ground of the absence of strict logical accuracy.

The foregoing methods have all considered wages and material as the only charges directly apportionable to the particular product or operation, and have made all the indirect charges a function of labor or material. A different conception is one which recognizes to a greater or less degree that in modern factory production there is a third element of cost, namely, that of the machinery employed. This theory has had various applications. In some it has merely determined the direct cost of the machinery, including depreciation, repairs, and interest, and from this obtained an hour-rate by dividing the total of such costs by the assumed number of hours which the machine runs. This method, of course, merely gives an apportionment of part of the indirect expenses of the factory and leaves probably the larger part still to be allocated. Furthermore, it does not give correct results where the machinery is idle for part of the time, for the rate charged is on the basis of the machine running the assumed number of hours. Sometimes the method has involved dividing all the indirect expenses by the total number of hours which the machines run, or are supposed to run, thus obtaining a uniform hour-rate without differentiation between different classes of machines. This is similar to dividing the indirect expenses according to the hours of labor spent on the particular operation, the difference being that in one case the hours of labor, in the other the hours of machine operation, are taken as the basis of distribution.

The obvious objection here is that many of the indirect expenses have no more to do with the cost of running the machines than they have to do with wages or the cost of material. For instance, in a factory in which all the work was done by hand there would still be indirect charges covering the cost of the factory itself, the watchmen, light and fuel necessary for keeping the building warm in winter. These certainly cannot be machine costs, where no machinery is used, and part of similar expenses in a modern factory equally relate to labor rather than to machinery. Or again some of the indirect expenses relate to the material used, as, for instance, the additional watchmen required where the material is costly and portable and hence easily stolen. Probably the indirect expenses of an establishment for polishing diamonds have no great relationship to the use of machinery.

In the more improved methods of obtaining machine rates the attempt is to determine not merely part, but all of the charges which attach to the running of a given machine, and to make an hour-rate which correctly distributes all such expenses. In other words it is an extension of the costing system to the operation of the individual machines themselves, so as to determine scientifically what is the real cost of running each one of them for an hour.

This system has been strongly advocated by A. Hamilton Church, who outlines it as follows:

"First we consider each machine as an independent production center, allocating to such centers all the expenses and charges which can on reasonable analysis be considered as chargeable as a composite rent or machine rate for all the factors of production therein concerned. Second, we charge to a monthly shop-charges account all charges whatever incurred by that shop, including all the items specifically represented in fractional detail by the machine rates, and also including, of course, such general

items as cannot be represented in the machine rates, of which the most obvious item is the supervision of a head or foreman.

" Then as each machine is occupied on jobs, the latter are debited with so much per hour as machine rate, and at the end of the month the total amount so earned by the machines is deducted from the total shop expenses, leaving a balance which is distributed over the same jobs as a supplementary rate. The ratio of the supplementary rate to the amount distributed by the machine rates forms a varying barometer whose fluctuation is an index of the efficiency of the shop.

" It will of course be obvious that when the machines are all running full time the supplementary rate will consist of the general charges alone, such as the foreman's wages, which have not any individual connection with the particular machines. This will be the condition of maximum efficiency in the shop. In proportion as all machines are not kept full of work all the time, this ratio of the supplementary rate to the amount distributed by the machine rates will begin to rise. The same effect will occur if any general kind of expenditure is increased." [1]

In determining the special hour-rate to be applied to a given machine the following method is advocated by Church. First the costs of the factory building as such are determined. These include interest, insurance, depreciation and repairs on the building, ground rent, if any, and taxes on the real estate. All these expenses are apportioned between the various machines on the basis of the floor space occupied. This rate may be further varied by distinguishing between space occupied in one or another part of the building. Second, the cost of lighting is determined, which is also distributed according to floor space where there is general overhead lighting, with spe-

[1] *Engineering Magazine*, XXI, 909.

cial charges for individual lights for a particular machine. Third, the cost of power, which includes fuel, boiler and engine costs, wages of firemen and engineers, etc., all of which is reduced to a rate per horse-power hour, which is then charged to each machine on the basis of the estimated power used by each machine. Fourth, the cost of the machine itself, which as before stated includes interest, depreciation, etc., and all of which is apportioned according to the estimated annual working hours.[1] The several factors just enumerated give a machine-hour rate, different for each type of machine, which is supposed with some degree of accuracy to cover all the costs of operating that machine, assuming that the machine is fully occupied. But it still leaves two elements of indirect cost not yet apportioned. One of these covers the general expenses of the factory which cannot with any show of reason be considered part of the cost of operating the machine, and the other that element of expense which remains unapportioned because the machines are not run to their full estimated capacity.

It is apparent, therefore, that even the elaborate scheme of machine costs proposed by Church does not entirely remove the problem as to the distribution of indirect factory costs. It has, however, made that problem of much less practical importance, for instead of considering all the expenses over and above the wages and cost of material as indirect expenses, the apportionment of which must be largely by a crude and unscientific ratio, the bulk of the general factory expenses are found to be directly attributable to particular jobs through the machine rate, and there remains as unallocated expenses only the two items mentioned in the last paragraph—those by nature not assignable to a machine rate, and those due to idle plant.

The treatment of the unassignable expenses is relatively

[1] *Engineering Magazine*, XXII, 31 ff.

unimportant, for it cannot constitute a very large proportion of the total expenses. Church suggests that the apportionment be on the basis of the hours spent on the various jobs. But where there is a considerable margin due to idle plant the apportionment of this sum is of some theoretic interest.

The illustration given by Church assumes a factory with four machines on which the machine rate was based on the assumption that they would each work 200 hours, the rate charged to each machine being 40, 30, 20 and 10 cents respectively. Had each of the machines been used for the full assumed time the charges would have covered the total indirect expenses of $200, but because of idleness there remains a balance of unassigned charges amounting to $58, the charges to each machine being as shown below:

FORM 115.

MACHINE	Time used	Rate per Hour	Amount Charged
A	120	$0.40	$48.00
B	134	0.30	40.20
C	169	0.20	33.80
D	200	0.10	20.00
	623		$142.00

In this case, the author argues, the $58 may either be apportioned on the basis of the hours employed, making a supplementary rate of 9⅓ cents per hour, or on the basis of the amount of the machine charges, making a supplementary rate of 40.8 per cent. (*ibid.*, xxii, 910). Whichever method is used, the result is that the cost of production is increased because of the idle machines.

To this some critics vigorously object. If the costs are taken as the basis for making estimates, or bids, it leads to the illogical result that at the very time when, because

of an idle factory, it is most desirable to get new work, the accounts will show that the work cannot profitably be done except at a price higher than normal. Whitmore, writing in the *Journal of Accountancy*, therefore urges that these costs representing idle time should not be charged up against the goods produced. In his opinion they should be put in a separate account which would be treated as a general expense of the establishment, not as part of the immediate cost of manufacturing. But the practical results are the same whether supplementary charges are treated as Whitmore suggests or are all distributed over the goods produced. So long as the elements representing idle machines are shown in a supplementary rate, attention is clearly drawn to the loss that comes from idle plant. There is the same incentive to try for new business whether that loss appears among the manufacturing costs or is separately shown as one of the general expenses of the establishment.

A vital difference in method of estimating cost turns on the point whether the indirect factory expenses which are apportioned to different jobs are the actual expenses incurred during the period in which the operations are performed, or whether they are to be based on the experiences of past operations. For instance, in a given factory it may be desirable to treat the indirect costs as a percentage to be added to the prime cost. This may be done by taking account, say, at the end of each month of all such expenses and accurately apportioning them to the work then in progress. But others, as for instance Oberlin Smith and Nisbet, recommend that the added charge be based on the experience of a preceding year, or series of years, so that the charge can at any time be made without waiting for the results of the current period.

To some it seems that by taking the current figures a greater degree of accuracy is obtained. But it should be

remembered that for certain purposes what is desired is not so much the actual amount which it cost to produce a certain commodity, as an estimate of what it will cost to produce more of the same kind of goods. This is particularly true where special contracts are undertaken. Just what experience will give the best indication of future costs may be debatable. It does not necessarily follow that the experience of the present month is any better criterion than that of last year.

The distribution of general establishment charges offers somewhat similar difficulties. These expenses include the office expenses, the expenses of selling, and the general expenses of financing and managing the whole enterprise. Alternative methods of dividing these expenses among the products are to apportion them in proportion to:

1. The Wages Cost.
2. The Factory cost, i. e., the cost of wages, material and the indirect factory expenses, or
3. The hours consumed in manufacturing the product.
4. The selling price.

The second method seems the most logical, for it apparently covers all the elements for which the establishment exists. Church, however, advocates employing the hours as the basis, making, however, certain modifications in the rates charged to different classes of commodities.

In the preceding pages have been discussed the problems concerning the distribution of indirect charges in general. Further difficulties arise in reference to the apportionment of certain special costs. One of these, relating to the cost of patterns, requires particular mention. Not only is there the general question as to how far the costs of designing and making patterns should be charged to expense, and how far the patterns should be considered an asset, but there is a further difficulty. After having decided that a given amount is really an expense, is it to

be allocated to the particular products made from the pattern or treated as a general expense of the factory? This is particularly clear where unsuccessful patterns or designs are made. Are these all to be charged against the cost of the article made from a later satisfactory model, or do the preliminary attempts represent merely general expenses of the factory as such? Somewhat similarly: is the cost of making a special pattern for an article made on contract to be considered as cost of completing the contract or is there a residual value representing the serviceability of that same pattern for future possible contracts?

Three points of uncertainty arise even in regard to the best system of cost accounting. 1. The first is whether the information acquired is after all worth the expense of acquiring it. This is more than doubtful in some of the more elaborate and expensive systems of cost keeping that are occasionally introduced. To take a flagrant and notorious case the cost system introduced into the Government Printing Office seems to have cost decidedly more than it was worth. In this instance the committee investigating the system reported that it "is principally to be criticised upon the score that in an attempt to secure all classes of detail, the amount of labor entailed upon each employee for the purpose of recording necessary facts, and the amount of labor required for subsequent tabulation, were so great as to make the system almost prohibitive."[1]

2. The second point of doubt is as to the degree of accuracy which may be obtained and the danger which arises from treating as actual what is merely hypothetical. It has been shown that even the division between the Manufacturing Account and the other portions of the Profit and Loss Account is with difficulty drawn and can never be regarded as of absolute value. Much more is it true

[1] LX Cong. 1. Sess. H. Doc. 974, p. 11.

that the detailed apportionment of expenses among the different processes or the various commodities is to some extent a matter of estimate. To be sure accounts can be prepared, though with great difficulty and much expense, in which every cent expended will be allocated to some unit of product. But it must be remembered that this rests on estimates which can never be exact. To illustrate: It is difficult to determine the exact cost of power in a factory. Coal and wages may be known, but depreciation of plant is an estimate merely. But granting a substantial accuracy as to the cost of the total power this can be divided to the last cent by some system of machine rates. But much of this ostensible accuracy is specious. It is a rough estimate at best which attempts to divide the horse power among the different machines, and the degree of accuracy obtained in the final results can never surmount this fundamental defect. And the whole system of fixing the machine rate depends on an incorrect estimate of the hours during which the machine will be at work. As Burton said, "Cost accounts based on separate charges for each machine employed must be generally hypothetical, and in many if not the majority of cases they must be delusively hypothetical."

3. A third point bears on the application which is to be made of the result. Are they to be used in determining whether capital shall go into a given industry? If so, it is evident that what is wanted is a correct estimate of the net income after deducting all interest on capital and other items frequently, indeed generally, excluded from the cost accounts themselves. The information necessary to show whether an enterprise is ultimately successful is very different from that which shows whether an enterprise once established should be continued. Cost accounts as they are frequently prepared confuse these two points of view. Thus Whitmore criticises the inclusion of idle-machine cost

as not showing whether to a new concern it is desirable to undertake certain work. The idle-machine cost, says he, is incidental to the establishment of a new concern and should not be included in an estimate which shows whether goods can be produced profitably at a certain price. But the same author includes interest on the cost of machines and buildings in his estimate of machine costs, while these have nothing to do with the cost of producing further goods by a factory already established. As is well known in railroad practice, when a road is once permanently constructed it is better to carry freight at a price not covering interest than to refuse traffic. The same principle, of course, applies to a factory. If, as seems to be the opinion in discussing idle-plant costs, the purpose of the cost account is to show the figure at which the established factory can afford to produce, it is clearly illogical to include in this figure interest, which indeed bears on the ultimate profitableness of the enterprise, but not on the desirability of undertaking a given contract.

As to the technic of cost accounting little can here be said. It is impossible to frame a system of cost accounting applicable to establishments of different character. Iron works producing a single form of staple commodity, a factory making a few standard grades of cloth, each involving a succession of separate processes, works manufacturing special machines where it is desirable to learn the cost of the entire machine and of each of its parts, and a shipyard undertaking special contracts, each needs an entirely different system of keeping its cost accounts. No general scheme of forms can be outlined which will apply to all of them. Nor can a scheme be outlined which will apply in detail to the different individual establishments of a single class of undertakings. As Dicksee has said:

"It need hardly be pointed out that the requirements of undertakings carrying on a similar business are by no

means uniform. Special and local considerations have to be taken into account, and the most desirable system for any particular undertaking can only be ascertained after a full and detailed inquiry has been made into its peculiar circumstances and conditions."[1]

Even to describe a system serviceable to a particular establishment, while it might have illustrative and suggestive value, would require so extended a treatment as to exclude it from a treatise on the general principles of modern accounting.

The best that can be done is to call attention to some of the most elementary matters of the technic of cost accounting, referring the reader to the more extended treatises on cost accounting, as indicated in the bibliographical note appended to this chapter, for more detailed information, or better still to emphasize the necessity of employing a technical expert to arrange a system of cost accounting adapted to the particular needs of a given establishment.

Cost accounting, as shown above, requires (1) an accurate recording of the wages directly paid, (2) of the material consumed, and (3) a systematic allocation of the indirect factory and establishment charges incurred in connection with each contract, process or product. To keep track of the direct wages it is evidently necessary to have a daily record kept showing the exact nature of the work on which each laborer is employed. Only by such an elaborate system can the proper amount be charged to the separate accounts representing the direct wages cost of the particular contract or process. From these daily individual slips can be prepared a summary of wages showing by individuals or departments the total direct wages charge. Sheets ruled in columns representing the various subdivisions will most conveniently serve for such records.

The material consumed needs similar treatment. Here,

[1] *Advanced Accounting*, p. 232.

however, it is well to emphasize the need for careful records, as the keeping track of materials used is generally not so accurately done as in the case of wages paid. Strangely enough accountants who require the pay roll to balance to the last cent pay little attention to the accuracy of the accounts representing material consumed. A discrepancy in the cash drawer excites immediate attention while valuable material and finished parts are often treated with carelessness and no exact balancing is expected of the storekeeper. The first requisite is, therefore, a more careful accounting for the materials as well as for the cash in the drawer, an accuracy regarding amount of material used not dissimilar to that required in regard to wages paid.

Where the materials are directly purchased for a particular contract this is simply done, and probably with greater accuracy than where material on hand is taken from the warehouse for a similar purpose. Again the fiction that the cash directly paid out is more important than a similar value of other assets is seen to affect accounting methods.

It is in the treatment of stores that the greatest improvements have been introduced. In any system of adequate cost accounting it is now recognized that it is necessary to keep accurate track of all goods coming into the stores, of all goods issued for different jobs, or all returned goods not needed for the job for which they were originally issued. In this way it is possible (1) to verify the amount of goods on hand at any time and so prevent peculation and waste, and (2) to keep account of the material actually used in each job. Model forms of a stores record sheet, and a requisition are given on pages 311 and 312.

From the slips regarding the wages and materials consumed, and from similar records showing the machine rates, the proper entries can be made in a ledger account opened for each job. These ledger accounts are most con-

FORM 116.

STORES RECORD SHEET

(Article) (Description)

Location Unit Maximum Minimum

Ordered.			Received.					Issued.				On Hand.	
Date.	Quant.	Order No.	Date.	Purch. Order No.	Quant.	Price.	Value.	Date.	Order No.	Quant.	Value.	Quant.	Value.

FORM 117.

Requisition No.

Date 190

REQUISITION FOR STORES

To the General Storekeeper:

Kindly deliver to

the material described below.

Production Order No. Department No.

Quantity.	Articles.	Price.		Value.		

Checked by _____

_____

(*Foreman*)

FORM 118.

COST LEDGER

Job No. Description For Price

Wages.			Material.				Machine Rates.			Summary.		
Date.	Amount.		Date.	Order No.	Amount.		Date.	Amount.				
										Wages		
										Material.....		
										Total.....		
										Machine Rates.....		
										Total.....		
										Supplementary Charges		
										..... % on.....		
										Total Cost.....		
										Price		
										Profit.....		

veniently kept in loose leaf ledgers, ruled somewhat as in Form 118. On the same sheet may be entered the supplementary charges and such other information as may be desired.

The forms given above apply particularly to an establishment where it is desired to ascertain the cost of special contracts. Where machines, for instance, are being made for stock, or where merchandise such as cloth is being similarly made, the items, for which columns are to be ruled, in the Cost Ledger Accounts would of course vary. The cost account of the finished machine would probably indicate not the labor, and material and machine rates as a whole, but rather the total cost of the several parts making up the machine. The cost of the cloth would not be divided into wages and material but into the costs of the several processes involved in making the finished product. In each case the elements must be combined so as to give most easily the information wanted in the particular factory.

In many of the forms used great economy is secured by the use of duplicating devices, so that, for instance, the filling out in triplicate of an order for stores will provide an order to the storekeeper, a memorandum for the foreman issuing the order, and a memorandum for the cost accountant whereby the proper entry can be made in his records.

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FOR FURTHER BIBLIOGRAPHY, SEE:

Encyclopædia of Accounting, II, p. 299.

Engineering Magazine, XXVII, p. 645.

The Accountants' Library, London, a series of some forty volumes treating of special branches of accounting gives many forms applicable to the particular needs of various classes of establishments.

CHAPTER XVII

PARTNERSHIP ACCOUNTS

PARTNERSHIP accounts constitute no separate system of accounting. Whether the proprietorship is vested in one or more persons the general principle of double entry bookkeeping, that there is an equation between the sum of the Proprietorship accounts and the sum of the Goods accounts, holds true. The mere subdivision of the proprietorship into various accounts introduces no new principle.

The essential problems of partnership are those which bear upon the essential character of the partnership relation and refer to the proper division to be made of profits and losses, of assets and liabilities. If it is clearly understood in each case just what contract has been made there is ordinarily little difficulty in formulating the accounts. But, unfortunately, the terms of partnership agreements are at times vague, and even the courts have not always agreed on their interpretation. Some of the cases in which difficulties arise are therefore of importance to the accountant even though there may be no really vital accounting principle at stake.

The first class of difficulties arises in connection with the establishment of the firm. When an individual first opens a set of books there either is no difficulty in knowing how much capital he contributes, or if there be a doubt it is of no particular moment so far as it concerns ultimate distribution of wealth. If A begins business with $5,000 cash and certain real estate he should, of course, attempt

to place correct valuation on the latter in estimating his net wealth. But if he fails to do so it evidently does himself no injury. But if two persons join in a partnership, one furnishing cash and the other real estate, it is necessary to know what value is placed on the latter. To be sure the original entry is the same whether it be in the books of a single trader or those of a partnership, as in either case Real Estate is debited and the Capital account of the one contributing it is credited. This may be illustrated by assuming the following opening:

FORM 119.

Dr.	*Balance Sheet.*	*Cr.*
Cash..... $5,000	A, Capital Account..... $5,000	
Real Estate..... 5,000	B, Capital Account..... 5,000	
$10,000	$10,000	

in which the cash is contributed by A and the real estate by B. Any other valuation of the real estate would not, in itself affect the credit of A's Capital account; nor would it, in the absence of special agreement, affect the division of profits, B being entitled to half of the profits whatever the value of his contribution. But the value at which the contributed property is admitted is, nevertheless, of vital importance in a partnership for having once been accepted by the firm any subsequent shrinkage in the value of the real estate is a loss to be divided between the two partners, and not one to be borne by the contributing partner alone. Conversely a sale of the real estate for $10,000 gives to A as well as to B one half of the appreciation, $2,500. It is evident then that it is essential in accounting to understand the nature of the contribution which each partner makes, to interpret accurately the terms of the partnership agreement, for " in the absence of special

agreement the rise or fall in the value of fixed plant or real estate belonging to a partnership is as much profit or loss of the partnership as anything else." (Robinson *v.* Ashton, L. R. 20 Eq. 28 (1875)).

In this connection it is necessary to distinguish between the division of profits and a share in the partnership. This may be illustrated by the case where a single trader whose Balance Sheet shows:

FORM 120.

Dr.	*Balance Sheet.*	*Cr.*
Merchandise..... $5,000	Capital Account.....	$5,000

and who agrees to admit B and give him *one half of the profits* if he contributes $6,000. This done the Balance Sheet shows:

FORM 121.

Dr.	*Balance Sheet of A and B.*	*Cr.*
Merchandise..... $5,000	A, Capital Account.....	$5,000
Cash..... 6,000	B, Capital Account.....	6,000
$11,000		$11,000

The basis of the division of the profits here differs from the proportion of capital contributed by each, which is legal and not uncommon in practice. But had the agreement been that the contribution of $6,000 by B entitled him to a *half interest* in the business the accounts would need different treatment. The half interest being secured by a contribution of $6,000 it implies that A too has a similar interest of $6,000 and consequently, accepting the valuation of the goods at $5,000 as correct, that he is construed as contributing Goodwill of $1,000 as well as the merchandise, thus giving:

FORM 122.

Dr.	*Balance Sheet of A and B.*	*Cr.*
Merchandise..... $5,000	A, Capital Account.....	$6,000
Goodwill 1,000	B, Capital Account.....	6,000
Cash..... 6,000		
$12,000		$12,000

If desired the same relationship can be represented with Goodwill eliminated as follows:

FORM 123.

Dr.	*Balance Sheet of A and B.*	*Cr.*
Merchandise..... $5,000	A, Capital Account.....	$5,500
Cash..... 6,000	B, Capital Account.....	5,500
$11,000		$11,000

Similarly if the arrangement specifies that B's contribution of $6,000 gives him a three fifths interest in the business, not merely three fifths of the profits, and the merchandise still being accepted as worth $5,000, B must be construed as bringing into the firm business connections, or other elements of Goodwill, to such a value that his total contribution represents one and a half times the value of A's merchandise, or:

FORM 124.

Dr.	*Balance Sheet of A and B.*	*Cr.*
Merchandise..... $5,000	A, Capital Account.....	$5,000
Goodwill..... 1,500	B, Capital Account.....	7,500
Cash..... 6,000		
$12,500		$12,500

or again eliminating the Goodwill:

FORM 125.

Dr.	*Balance Sheet of A and B.*	*Cr.*
Merchandise..... $5,000	A, Capital Account.....	$4,400
Cash..... 6,000	B, Capital Account.....	6,600
$11,000		$11,000

The first point in partnership accounting to be ascertained is then what is the exact nature of the partnership agreement; what is actually contributed; what is the division of interests between the partners.

It is also necessary to distinguish between one who buys, say, a third interest in a firm from the members of the firm and one who enters the partnership with a third interest. Thus if A and B are in business together with the following showing:

FORM 126.

Dr.	*Balance Sheet of A and B.*	*Cr.*
Miscellaneous assets..... $60,000	A, Capital Account.....	$20,000
	B, Capital Account.....	40,000
$60,000		$60,000

C might, if it were mutually agreed on, buy a third interest in the firm from B, paying therefor $20,000, which would give as the Balance Sheet of the new firm:

FORM 127.

Dr.	*Balance Sheet of A, B, and C.*	*Cr.*
Miscellaneous assets..... $60,000	A, Capital Account.....	$20,000
	B, Capital Account.....	20,000
	C, Capital Account.....	20,000
$60,000		$60,000

But if he were admitted to the firm with a one third inter-

est the showing, provided he contributed the book value of his share in the business, would have to be as follows:

FORM 128.

Dr.	*Balance Sheet of A, B, and C.*	*Cr.*
Miscellaneous Assets..... $60,000	A, Capital Account..... $20,000	
Cash..... 30,000	B, Capital Account..... 40,000	
	C, Capital Account..... 30,000	
$90,000	$90,000	

This important distinction has not always been observed by writers, as may be seen even in Dicksee's work on Goodwill.

The allowance of interest on partners' capital furnishes opportunity for disagreement, principally when the exact nature of the allowance is not definitely stated in the articles. If interest is to be allowed on the entire capital the matter is simple. Thus assuming partners who contribute as follows: A $100,000, B $60,000 and C $50,000, interest at 5 per cent. to be allowed and profits shared equally, the several accounts concerned will be as in Form 129.

The same net results, so far as the partners' balances are concerned, may be secured by crediting or debiting interest on the excess or deficit which each partner's contribution shows in relation to the average capital. The three partners have together furnished $210,000, of which the average is one third or $70,000. A receives interest on an excess of $30,000, B is charged on a deficit of $10,000 and C on $20,000, which gives the same balances to the credit of the several partners as those in Form 129, but without passing the charge through the interest or profit and loss account. The correct booking in this case could be secured by the following journal entry:

B.....	$500	
C.....	1,000	
To A.....		$1,500

FORM 129.

Dr.	*A, Capital Account.*		*Cr.*	
½ of interest allowed.....		$3,500	Cash.....	$100,000
Balance.....		101,500	Interest on $100,000 at 5%.....	5,000
		$105,000		$105,000
			Balance.....	$101,500

Dr.	*B, Capital Account.*		*Cr.*	
½ of interest allowed.....		$3,500	Cash.....	$60,000
Balance.....		59,500	Interest on $60,000 at 5%.....	3,000
		$63,000		$63,000
			Balance.....	$59,500

Dr.	*C, Capital Account.*		*Cr.*	
½ of interest allowed.....		$3,500	Cash.....	$50,000
Balance.....		49,000	Interest on $50,000 at 5%.....	2,500
		$52,500		$52,500
			Balance.....	$49,000

Dr.	*Interest Account.*		*Cr.*	
Allowed on partners' capital:			By A.....	$3,500
A.....	$5,000		" B.....	3,500
B.....	3,000		" C.....	3,500
C.....	2,500	$10,500		
		$10,500		$10,500

NOTE.—As these accounts are to show only the effect of the interest transactions the Interest Account has been closed directly into the Capital Accounts instead of being carried to the Profit and Loss account and appearing indirectly in the balance of Profit and Loss carried to the partners.

It is to be noted that had the basis of profit sharing not been one third to each but in some other proportion, say, 2:1:1, the basis of comparison, by which excess contributions are measured, would be correspondingly modified. Thus A's contribution being compared with two fourths of $210,000 or $105,000 he is charged with interest on $5,000 or $250; B showing an excess of $7,500 over $52,500 (i. e., one fourth of $210,000) receives $375; and C pays $125. These entries produce the same results as though the entire capital had been credited with interest and the total interest, $10,500, had been divided in the proportion last named.

If profits are divided in proportion to capital contributed by the several partners, interest may be reckoned for the purpose of distinguishing the business profits from those derived from invested capital, but the amounts credited to each partner is not thereby altered. Hence, while it may be desirable to make allowance for interest even though profits are proportionate to capital, this is useless unless put through the interest account in full.

It is seen therefore that interest on the partners' capital may be estimated either on the whole contributed capital, in which case the entries must go through the Interest Account, or by figuring it merely on deficiencies and excesses (relative to the proportion in which profits are divided). In the former case the entries must go through the Interest Account; in the latter the entries are made direct to the proprietors' Capital accounts and do not appear in the Interest Account. The former method not only serves to adjust differences between the partners, but at the same time serves to distinguish between the profits supposedly arising from investment of capital at the normal rate of interest and the profits of the business operations. The second method merely adjusts differences between partners.

Where the agreement does not call for interest on the whole capital but only on excesses and deficits relative to the amount agreed on the treatment is quite similar. Thus if the partners had agreed to contribute as follows: A $100,000, B $60,000, and C $50,000, but in fact paid $70,000, $73,000 and $25,000 respectively, profits to be shared equally, the Interest Account would show:

FORM 130.

Dr.	*A, Capital Account.*	*Cr.*	
Interest on $30,000	$1,500	Cash	$70,000
Balance	69,200	⅓ of interest received	700
	$70,700		$70,700
		Balance	$69,200

Dr.	*B, Capital Account.*	*Cr.*	
Balance	$74,350	Cash	$73,000
		Interest on $13,000	650
		⅓ of interest received	700
	$74,350		$74,350
		Balance	$74,350

Dr.	*C, Capital Account.*	*Cr.*	
Interest on $25,000	$1,250	Cash	$25,000
Balance	24,450	⅓ of interest received	700
	$25,700		$25,700
		Balance	$24,450

Dr.	*Interest Account.*	*Cr.*	
To B on $13,000	$650	On A's deficit	$1,500
Balance to partners:		On C's deficit	1,250
A $700			
B 700			
C 700	2,100		
	$2,750		$2,750

Had profits been shared in proportion to the agreed on contributions of capital (i. e., in ratio of 10:6:5 in this example) the accounts would show:

FORM 131.

Dr.	*A, Capital Account.*		*Cr.*
Interest on $30,000 deficit	$1,500	Cash	$70,000
Balance	69,500	$\frac{10}{21}$ of interest received	1,000
	$71,000		$71,000
		Balance	$69,500

Dr.	*B, Capital Account.*		*Cr.*
Balance	$74,250	Cash	$73,000
		Interest on $13,000 excess	650
		$\frac{6}{21}$ of interest received	600
	$74,250		$74,250
		Balance	$74,250

Dr.	*C, Capital Account.*		*Cr.*
Interest on $25,000 deficit	$1,250	Cash	$25,000
Balance	24,250	$\frac{5}{21}$ of interest received	500
	$25,500		$25,500
		Balance	$24,250

Dr.	*Interest Account.*			*Cr.*
To B on $13,000		$650	On A's deficit	$1,500
Balance to partners:			On C's deficit	1,250
A, $\frac{10}{21}$	$1,000			
B, $\frac{6}{21}$	600			
C, $\frac{5}{21}$	500	2,100		
		$2,750		$2,750

But in the latter case the adjustment could have been more simply made by entries made directly in the Capital Accounts, without passing through the Interest Account. But where this shorter method is used, the amount, on which interest is charged or credited to each partner, again is not determined by comparing his contribution with the amount which he agreed to furnish; but the amount which he contributes is compared with the proportion of the total contributed capital corresponding to his share in the profits. Thus in the above example A's actual contribution of $70,000 is compared, not with the amount agreed on, namely, $100,000, but with $\frac{1}{2}\frac{9}{1}$ (the ratio in which he shares profits) of the total contributed capital, $168,000, i. e., with $80,000, showing a deficit of $10,000. B's actual

FORM 132.

Dr.	*A, Capital Account.*		*Cr.*
Interest on $10,000 deficit	$500	Cash	$70,000
Balance	69,500		
	$70,000		$70,000
		Balance	$69,500

Dr.	*B, Capital Account.*		*Cr.*
Balance	$74,250	Cash	$73,000
		Interest on $25,000 excess	1,250
	$74,250		$74,250
		Balance	$74,250

Dr.	*C, Capital Account.*		*Cr.*
Interest on $15,000 deficit	$750	Cash	$25,000
Balance	24,250		
	$25,000		$25,000
		Balance	$24,250

contribution is compared with $\frac{6}{21}$ of $168,000 or $48,000, showing an excess of $25,000, and C's with $\frac{5}{21}$ or $40,000, showing a deficit of $15,000. The accounts would therefore appear as in Form 132.

To sum up: When interest is allowed on the *total* capital, entries may be through the Interest Account, or the adjustment may be made directly between the Capital Accounts by allowing interest on excesses and deficits relative to the proportion of total contributed capital corresponding to the individual partner's share of profits. But where interest is allowed only on *excesses* and deficits, the shorter method can be used only where profits and assumed capital contributions are proportionate. Otherwise the adjustment of excesses must be made by the longer form of putting entries through the interest or other similar account.

A third problem relates to the final distribution of assets in case of liquidation. Here great confusion exists, even in the decisions of courts. To illustrate, there may be taken a partnership between A and B in which A furnishes $2,000 and B $500, profits to be shared equally. But losses having been suffered, the total assets amount to only $1,000, the balance sheet showing:

FORM 133.

Dr.	*Balance Sheet.*	*Cr.*
Cash $1,000	A, Capital Account	$2,000
Deficit 1,500	B, Capital Account	500
$2,500		$2,500

It has been variously claimed that in such a case the available cash is to be divided either on the basis of the division of the profits, i. e., $500 to each; or on the basis of contributed capital, i. e., $800 to A and $200 to B. Neither of these is correct from the accounting viewpoint. The loss

of $1,500 by the terms of the agreement being divisible equally, the accounts should show:

FORM 134.

Dr.	*Balance Sheet.*	*Cr.*
Cash $1,000	A, Capital Account $1,250	
B, deficit 250		
$1,250		$1,250

so that A is entitled not only to the cash but has a valid claim against B for $250. A moment's glance will show that in no other way can losses be shared equally, and this is the doctrine of Nowell *v.* Nowell (L. R. 7 Eq. 538 (1869)).

Somewhat more complicated, but similar in principle is a case where three partners whose statement is:

FORM 135.

Dr.	*Balance Sheet of A, B, and C.*	*Cr.*
Cash $2,200	A, Capital Account $2,000	
Deficit 4,800	B, Capital Account 500	
	C, Capital Account 4,500	
$7,000		$7,000

Dividing the deficit gives:

FORM 136.

Dr.	*Balance Sheet.*	*Cr.*
Cash $2,200	A, Capital Account $400	
B, deficit 1,100	C, Capital Account 2,900	
$3,300		$3,300

If now, B is found to be insolvent and the claim against him worthless, a great variety of opinions are given as to

the proper division of the remaining assets between A and C. Thus it has been claimed that A is entitled to one half of the cash, or $1,000, others say to $\frac{2}{3}\frac{0}{3}$ or 676.92, and still other claims, whose reasoning need not be given here, but which may perhaps be worked out by the curious reader, give him $1,661.54, $2,113.04, and $2,666.66.

To the accountant the solution is simple and clear. There being only $2,200 cash with which to pay the $3,300 due to A and C, the two together are to suffer a further loss of $1,100 which according to the terms of the agreement is to be borne equally. Hence, charging the worthless claim against B equally to A and C gives:

FORM 137.

Dr.	*Balance Sheet.*	*Cr.*
Cash $2,200	C $2,350	
A, deficit 150		
$2,350		$2,350

whereby A, instead of receiving anywhere from $676.92 to $2,666.67, is compelled to pay C $150.

While the correctness of the principle involved in this solution is recognized by accountants, the courts have not been so uniform. However, it is most fully set forth, with illustrative examples in the case of Raymond *v.* Putnam (44 N. H. 160 (1862)), and has been more recently vouched for in Whitcomb *v.* Converse (119 Mass. 38 (1875)) and confirmed in Woelfel *v.* Thompson (173 Mass. 301 (1899)). Unfortunately a recent English case (Garner *v.* Murray [1904] 1 Ch. 57), relying on the phraseology of the statute, sanctions another solution.[1]

[1] The decision in Garner *v.* Murray has been much discussed by accountants. A series of interesting communications on the subject may be found in the *Accountant* for 1904. It is also discussed in

The foregoing discussion shows the futility of the question frequently raised as to the basis on which assets are to be divided, the ratio in which losses are shared being already given. Such a question involves a misconception or else is purely gratuitous. If all losses are shared according to the agreed proportion, the capital accounts of the several partners show the amounts which they are severally to receive or pay. Evidently a firm starting with an equality of assets and capital will, by the most elementary principle of bookkeeping, have assets still equaling the balances of the Capital Accounts if all shrinkages are deducted from the original credits. One needs not estimate proportions, the absolute amounts must appear in the Capital Accounts themselves. To determine the final distribution of assets it is necessary only to determine profits and losses, to divide these in the agreed proportion, and to discharge the remaining capital balances, collecting from the debtor, and paying to the creditor partners.

In one set of circumstances there is, however, a problem of division of assets apparently distinct from that of apportionment of losses. This occurs where a liquidation takes place and it is desired to distribute the assets in installments as quickly as they are realized, and hence before the net loss is ascertained. The aim is to distribute the assets in such proportions that in any contingency no one part-

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Dicksee's "Advanced Accounting," 2d ed., p. 66. Dicksee favors the solution here given, but in attempting to work out a solution corresponding to the decision of the court he seems to have misunderstood the latter.

The court records furnish many other interesting illustrations of the difficulty which the legal mind finds in solving problems requiring accounting knowledge. Aside from mere arithmetical errors, which are surprisingly common, many of the decisions involve errors in principle. Cases in point are: Gunnell *v.* Bird, 10 Wall. 304; Oakley *v.* Cokalete, 41 N. Y. Supp. 1124; Schulte *v.* Anderson, 13 Jones & Sp. 489; Butler *v.* Ballard, 43 N. Y. Sup. Ct. 191. The last named is quoted and criticised by W. C. Jaudon in *Banking Law Journal*, XI, 342.

ner will be paid more than his share. This may be illustrated by taking the case of a partnership in which the profits and losses are to be divided as follows: 50 per cent. to A, 30 per cent. to B, and 20 per cent. to C, the balance sheet before liquidation begins being:

FORM 138.

Dr.	*Balance Sheet of A, B, and C.*	*Cr.*
Assets $25,000	A, Capital Account $10,000	
Deficit 5,000	B, Capital Account 10,000	
	C, Capital Account 10,000	
$30,000		$30,000

On the principle already discussed the deficit is apportioned among the partners, leaving the claims of A, B, and C at $7,500, $8,500, and $9,000 respectively. If the assets were all in ready cash the problem of distribution would be removed. But assuming that the assets are only gradually sold and converted into cash, the yield in successive installments being $10,000, $8,000, and $6,000, after which nothing remains, there is a real problem as to the proper distribution of each installment. When the first installment of $10,000 is received how should it be divided? It should not be divided in proportion to the original contributions of capital, that is, in thirds; nor in the same proportion as profits were divisible, that is, in the ratio of 5:3:2; nor in proportion to the capital then standing on the books, that is, in the ratio of 75:85:90. The correct method is as follows: It being impossible to know beforehand how much the remaining assets will yield, it is necessary to equalize the status of the partners so that if no more cash is received the actual losses will be in the predetermined ratio. If nothing had been realized the net loss of each of the partners would have been $7,500, $8,500, and $9,000

respectively. But if A loses $7,500, B should, by the partnership agreement, lose only $4,500 and C only $3,000. Before paying anything more to A $4,000 should therefore be paid to B and $6,000 to C. The $10,000 cash should accordingly be divided on this basis. The illustration is here made simple by assuming a first installment just sufficient to equalize the status of the three partners and by omitting all consideration of expenses and interest. But similar reasoning would determine the distribution had some smaller sum been available for dividends.

The adjustment between partners having once been made, all further installments are to be divided in proportion to the division of losses. This is not because the division of assets is at all the same as the division of profits or of losses, but because this method of treating all unrealized assets as potential losses prevents any one of the partners being overpaid. After the distribution of the three installments the accounts will appear as in Form 139. If the assets fail to produce more the losses are still properly divided according to the agreed ratio.[1]

The discussion in the present chapter does not profess to treat any problems save those which seem peculiar to the status of partnership. While in the keeping of partnership accounts questions will arise as to the most convenient method of booking certain transactions, these are ordinarily mere questions of general bookkeeping technic and not peculiar to partnership. Or problems may arise such as the amount of profits to be divided, but these are all matters of accounting principles elsewhere discussed, say under valuation, depreciation, or profits; questions all

[1] The problems involving the principle discussed above are given in Dicksee's "Advanced Accounting" (p. 69) and in Broaker and Chapman's "American Accountants' Manual." The solution given in the former is correct, but in the latter, the authors, while apparently recognizing the correct method, fail rigorously to apply it so that the results are in part wrong.

FORM 139.

Dr.	*A, Capital Account.*	*Cr.*	
Deficit	$2,500	Original capital	$10,000
Cash 50% of 2d installment	4,000		
Cash 50% of 3d installment	3,000		
Balance	500		
	$10,000		$10,000
		Balance	$500

Dr.	*B, Capital Account.*	*Cr.*	
Deficit	$1,500	Original capital	$10,000
Cash 40% 1st installment.	4,000		
Cash 30% 2d installment.	2,400		
Cash 30% 3d installment.	1,800		
Balance	300		
	$10,000		$10,000
		Balance	$300

Dr.	*C, Capital Account.*	*Cr.*	
Deficit	$1,000	Original capital	$10,000
Cash 60% 1st installment.	6,000		
Cash 20% 2d installment.	1,600		
Cash 20% 3d installment.	1,200		
Balance	200		
	$10,000		$10,000
		Balance	$200

of which refer to corporation and individual accounts as well as to those of partnership. The partnership problems, as such, are generally involved in the correct interpretation of the partnership agreements, perhaps ambiguously drawn up or even resting on a vague oral agreement, and have to do primarily with the essential relationship of the individual partners, the terms on which they unite, the

division of profits, the adjustment of unpaid capital contributions through allowances for interest, and the final distribution of assets, all of which transactions must conform to the rules of the partnership agreement.

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CHAPTER XVIII

THE STATEMENT OF AFFAIRS AND DEFICIENCY ACCOUNT

THESE statements, while somewhat outside of the regular scheme of accounts, are sufficiently important to deserve some notice. The Statement of Affairs is a statement drawn up when a concern becomes insolvent, and designed to indicate to creditors the probable amount which will be realized in liquidation. The Deficiency Account is a supplement to the Statement of Affairs and serves to explain how the deficiency shown by the Statement of Affairs has been caused.

The use of these forms is of English origin and depends on the provisions of the Companies Acts which prescribes the form in which they shall be made out. In the United States the laws are less exact regarding bookkeeping forms, and the statements submitted to the courts are generally not in strict accounting form. But despite the absence of legal authorization, the advantage which results from a clear and formal presentation of the status of the involved concern is so great that American accountants are also frequently making use of the Statement of Affairs and Deficiency Account.

The use of these forms may be illustrated by presenting an example applying to a typical problem but one which contains only a few items and is free from complications.

The firm of A & B finding itself financially embarrassed is forced to go into liquidation November 30, 1908. A statement drawn from the books at that date shows the Trial Balance exhibited on the following page.

Dr.	*Trial Balance.*		*Cr.*
Real estate	$70,000	A, Capital	$35,000
Investments	140,000	B, Capital	30,000
Merchandise	100,000	Bills Payable	204,500
Bills Receivable	21,250	Accounts Payable	125,000
Accounts Receivable	14,250		
Drawings A	12,000		
Drawings B	10,000		
Bad debts charged off	15,000		
Expenses	10,670		
Cash	1,330		
	$394,500		$394,500

A further examination of the condition of the firm discloses the following facts:

Of the Investments, all of which are good, $100,000 are pledged to secure a note of $85,000 and $15,000 are pledged with the holder of a note of $20,000.

Of the Accounts Receivable $5,000 are recognized as bad, $3,000 are doubtful with an estimated value of $1,000, the remainder are good.

The Bills Receivable are estimated as worth $15,000.

The Merchandise is estimated as worth $40,000, and the Real Estate as worth $50,000.

In addition to the liabilities shown on the books, $2,500 is due for wages, $1,000 for salaries, and $250 for taxes, all of which are preferential claims against the assets.

With these facts and estimates the Statement of Affairs and Deficiency Account would be as follows:

FORM 140.

Statement of Affairs.

Liabilities.			*Assets.*		
	Gross Liabilities.	Expected to Rank.		Book Value.	Estimated to Realize.
Unsecured creditors	$224,500	$224,500	Cash	$1,330	$1,330
Creditors partly secured $20,000			Book accounts:		
Less securities held 15,000	20,000	5,000	Good $6,250		
			Doubtful (estimated to realize $1,000) 3,000		
Creditors fully secured $85,000	85,000		Bad 5,000	14,250	7,250
Deducted from assets as *per contra*					
Preferred claims—Wages 2,500			Bills receivable	21,250	15,000
Salaries 1,000			Investments $140,000		
Taxes 250	3,750		Less amount held by creditors as *per contra* 100,000		
Deducted from assets as *per contra*					
			Surplus of Investments	40,000	40,000
			Merchandise	100,000	60,000
			Real estate	70,000	50,000
					$173,580
			Less Preferred Claims as *per contra*		3,750
			Assets available for distribution, equivalent to 74% on claims of general creditors		$169,830
			Deficiency		59,670
		$229,500			$229,500

FORM 141.

Dr. *Deficiency Account.* *Cr.*

To Capital on Jan. 1, 190–	$65,000	By sundry trade losses....	$29,420
" Deficiency as per statement of affairs.	59,670	" Shrinkage as per statement of affairs, viz.:	
		Book Accounts. $7,000	
		Bills Receivable. 6,250	
		Merchandise.... 40,000	
		Real Estate.... 20,000	73,250
		" Drawings of partners....	22,000
	$124,670		$124,670

Considerable variation is, however, found in the arrangement of such statements. In the form given above it is noticed that the Liabilities are given on the left hand, just as they appear on that side in English Balance Sheets. By some accountants this order is reversed. Similarly there is a disagreement in practice regarding the arrangement of the sides of the Deficiency Account, some placing the Deficiency and Capital items on the Debit side, and the items showing how the losses occurred on the Credit side of the account, as is done above, while others reverse this order. There are, accordingly, four different combinations, all of which have the support of authorities of repute. These may be scheduled as follows:

Variations in Arrangement of Statement of Affairs and Deficiency Account.

	Statement of Affairs.		Deficiency Account.	
	Left Column.	Right Column.	Left Column.	Right Column.
Ia.	Liabilities.	Assets.	Capital and Deficiency.	Shrinkages, etc.
Ib.	"	"	Shrinkages, etc.	Capital and Deficiency.
IIa.	Assets.	Liabilities.	Capital and Deficiency.	Shrinkages, etc.
IIb.	"	"	Shrinkages, etc.	Capital and Deficiency.

Of these various forms Ia corresponds to the schedules of the English Companies Acts, is most generally used in England, and in this country is used, for instance, in Broaker and Chapman's "American Accountants' Manual," and in W. H. Dennis's "Practical Accounting." The second arrangement (Ib) is the one approved by Lisle. The third (IIa) is favored by F. S. Tipson in his "Theory of Accounting" and in the model form given by Leo Greendlinger in the *Journal of Accountancy*. The last form bears the approval of A. G. Platt as shown in the appendix to Rahill's "Corporation Accounting."

Some of the authors mentioned above have argued at some length in favor of one or the other arrangement. Some ingenuity has been exhibited in showing that the arrangement, Liabilities—Assets, has some particular logical justification when used in the Statement of Affairs. But historically it doubtless arose as the result of that arrangement in the Balance Sheet, which has not been followed elsewhere than in England. It may furthermore be noted that in forms Ia and IIb the deficiency shown in the Statement of Affairs is carried to the opposite side of the Deficiency Account, just as a balance of any account is thus transferred to another account. But in forms Ib and IIa the deficiency item appears on the same side of the two accounts. Probably the preponderance of custom is in favor of the form given above (Ia), although in view of the divergences noted it cannot be said that this form is at all binding. One may accept the prevalent custom without agreeing with the arguments given to show that the arrangement is logical as well as customary.

The purpose of these statements being to present to the general creditors a succinct view of the status of the concern, the best arrangement is to eliminate all secured claims and the property by which they are protected from the figures showing the net assets and the ranking lia-

bilities. A comparison of the resulting totals gives the percentage on general claims which may be expected, without allowing for expenses of liquidation. Where a claim is secured by some specific collateral the two items should be canceled against each other as is shown in the treatment of the " Creditors fully secured " above. But where the claim is not secured by a specific security it is deducted from the total assets, as in case of the Wages and Taxes in the illustration given. Some accountants object to thus subtracting claims not secured by specific collateral, but the general practice favors so doing.

In the Deficiency Account given above the business had been run at a loss, as shown by the item of Sundry Trade Losses. It is desirable to make the showing in the deficiency account as complete as possible, and therefore it may cover the operations of several years, showing on one side the original capital and the profits made in certain years, on the other side of the account the net losses of other years, separately displayed. If the concern is a corporation, dividends paid should be disclosed just as withdrawals by the partners are shown in the present illustration.

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CHAPTER XIX

TECHNICAL IMPROVEMENTS IN ACCOUNTING PRACTICE

WHILE bookkeeping has preserved unaltered the essential principles involved in Paciolo's treatise, yet the practice of the art has not been stationary during the past four centuries. Two lines of development may be mentioned. One has been in the direction of technical devices, of one kind and another, designed to lessen the routine drudgery of the bookkeeper—labor-saving devices which either eliminate part of the work not essential to securing the necessary results, or assist the accountant in performing the unavoidable operations. The second line of development is one in which the operations of bookkeeping and the results obtained are made to correspond with the changing economic conditions and the resulting modifications of business activities.

The more technical improvements which have taken place may be grouped as affecting

1. The relation between the chronological and classified records of business transactions.
2. The form and arrangement of the ledger.
3. The performance of the necessary mathematical calculations by substituting machine labor in such operations.

1. It has been seen that the significant feature of double entry bookkeeping is a classified outline of all business operations, which is kept in what is called a ledger. The ledger is thus the essential book, at least so far as accounting theory is concerned. Indeed, it has occasionally been

the only book kept, as for instance by the earlier Venetian accountants, or as advocated—as though it were a distinct invention of his own—by Lizet in 1660; yet it has been well-nigh universally recognized that it is practically necessary to have a chronological as well as a classified record of business transactions.

But the form in which this chronological record is kept, and the method by which the record is transcribed from the original record into the ledger have been greatly modified, always with a view to eliminate needless repetition and to save unnecessary labor. Paciolo considered it desirable to have a threefold series of records. The first called Memorial, a term still used in Germany, contained a mere description of the transaction, generally expressed in untechnical language. The second, or Journal, repeated the record but expressed it in technical terms, with values reduced to the current money of account, and with a clear indication of which ledger account was to be debited and which was to be credited. From the Journal the proper postings were made into the Ledger.

This complicated process was perhaps originally necessary. As Row-Fogo has pointed out, in the beginnings of modern commerce, when there was no uniform coinage, it was frequently a difficult task to translate the transaction into terms suitable for posting into the Ledger. Yet it was desirable to make the first record at once, leaving the proprietor to determine later the form in which it should ultimately appear in the Ledger. This was perhaps all the more necessary as it was customary to use the books of account not merely as a record of the transaction but as well as legal evidence of the contract, with the signatures of the verifying witnesses. Such an entry may be shown by quoting from an account book kept more than five hundred years ago by a merchant of Hamburg:

" Bertold Scroder and Herr Johann, his son, the Pres-

byter, are together indebted for 24 marks for two pieces of Oldenard cloth viz: 1 red and 1 blue which they bought on the day after the feast of St. Peters Chains, to be paid at the beginning of Fast time. In presence of Herren Johann Stuveke and Luke and Albert Albecke."

But the elaborateness of entry became needless and undesirable as commerce became better systematized. Evidences of contract were more conveniently kept elsewhere, instead of crowding them into the record of transactions; the use of uniform currency made a definite entry no longer difficult; and the conventional threefold series of Memorial, Journal, and Ledger, if not altogether abandoned, is at least obsolescent.

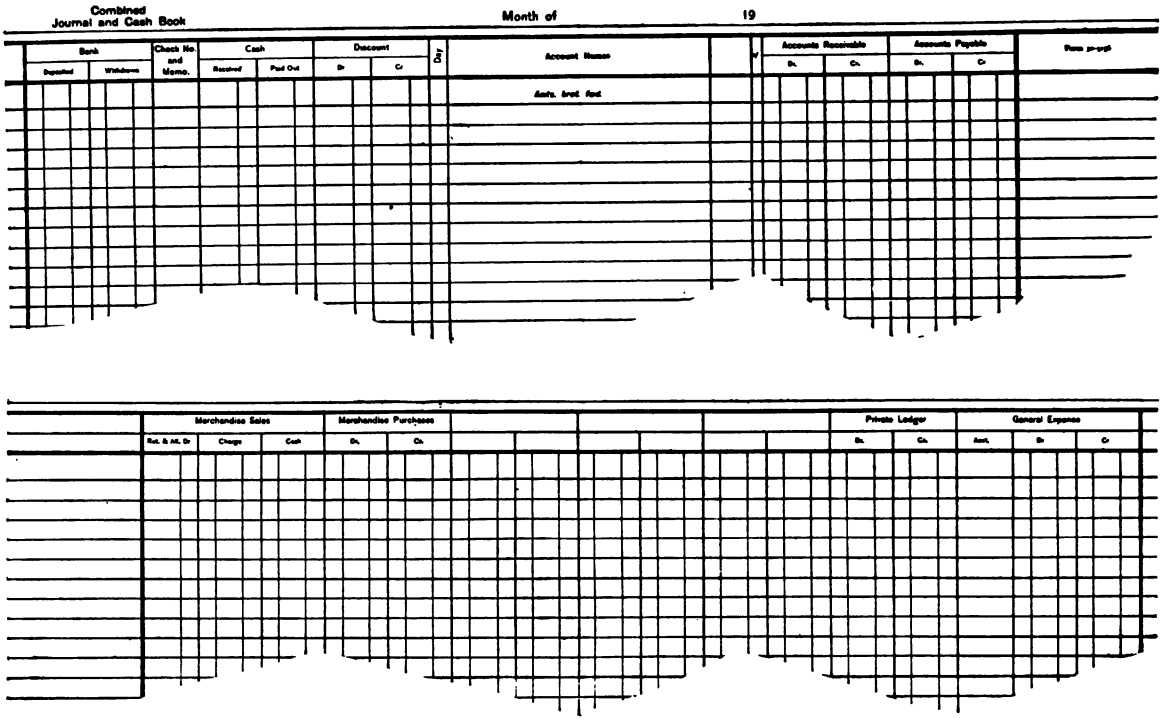
Especially in American practice has there been a tendency to simplify and abridge. The Memorial, called in English the Day Book, a most inappropriate term to be used in contradistinction to Journal, both having the same root meaning, has largely disappeared as a separate book. Where detailed description of the transaction is still required it is written directly in the Journal itself. But not content with the elimination of the Memorial or Day Book, modern bookkeeping has gone farther and has to a considerable extent dispensed with the Journal, at least in the sense of the formal and somewhat stately record in which the bookkeepers of the last generation thought necessary to make the entry before it could appear in the Ledger, and from which each item was separately transcribed.

This has been brought about by using a columnar record, in which items of a similar nature, as, for instance, Cash, Discount, and Merchandise, are placed in separate columns and the footings of these columns, not the individual items, are posted into the Ledger.

This device, which appears in myriad forms, may be illustrated by a Columnar Journal-Cash Book, as shown in Form 142.

Form 142.

COLUMNAR JOURNAL—CASH BOOK



Here only the footings of the several columns, Accounts Receivable, Accounts Payable, etc., are posted into the Ledger. Items occurring too infrequently to need a special column can, however, be entered in the last column, with the name of the account to which the special entry is to be posted.

Carried to a logical extreme the columnar system becomes at once Journal and Ledger, the column for the descriptive text furnishing the chronological record, while the distribution of amounts into various columns—a separate column being provided for each account—serves for the classified record or Ledger. This is what was done in Form 1 on page 5. In that example the perfect combination of Journal and Ledger was easily accomplished because the scheme of accounts consisted of only three accounts. With a large number of accounts it is easily seen that such a system is impossible. Even where there is no attempt to dispense with the Ledger and the columnar Journal is used only as a means of obtaining footings for posting, the increase in the number of such columns soon becomes objectionable. The book itself becomes unwieldy, it is uneconomical of paper, and the danger of making the entry in the wrong column becomes increasingly great. While the columnar system thus has clear limitations, its acceptance has become very widespread, especially in the United States. It is less common in Europe, where the term American Bookkeeping is applied to a system using books so ruled.

Parallel with the abolition of the unnecessary duplication of Memorial and Journal, there has been an increase in the number of books from which postings are made into the ledger. In Paciolo's scheme all entries came into the Ledger through the Journal, in modern accounting there may be a dozen books from which postings, generally of footings, are made into the Ledger. This is rendered neces-

sary by the increase in the amount of business transacted, which makes it impossible for one person to make all the entries of current transactions. By dividing the books of original entry, so that transactions of different classes are made in separate books, an indefinite number of clerks can be simultaneously engaged in making entries, while the posting into the Ledger can be done later, by totals. The first division of this kind to be made was the separation of all transactions in which a cash payment is involved. The separate Cash Book was not known to Paciolo and did not appear until about the middle of the sixteenth century. At present not only cash, but many other transactions, purchases, sales, discounts, loans, etc., are entered independently in separate books and posted thence into the Ledger, generally without passing at all through the Journal, although by some an entry of the totals is passed through that book.

In these coördinate books of original entry, as well as in the Journal, the principle of columnar ruling is applied. It is interesting to note that this device was presented in the first American text-book on bookkeeping published by William Mitchell in 1796. In this valuable but little-known work each side of the Cash Book is provided with columns for Merchandise, Bills Receivable (or Payable), and Sundries.

It is thus seen that there has been a steady line of development in bookkeeping technic in connection with the relation between the chronological and the classified records, whereby the Ledger has been brought closer to the original entries, duplications have been avoided, totals have been entered instead of needlessly minute details, and facilities have been created for attending to a greater amount of business than could have been accomplished by the older forms. But in all this nothing has been done at all opposed to the principles of double entry bookkeeping,

and everywhere the equation between Goods and Proprietorship is maintained as carefully as ever.

2. The second line of improvements has been in the form and arrangement of the Ledger itself. In general the traditional ruling of the Ledger has been preserved, and there are still two columns for the Debit and Credit items respectively. Some little variation exists in the position of these two columns relative to each other and to the column for descriptive text, and at times a third column is added to contain the balance. This latter device means some additional writing, but it has the advantage of making immediately available the desired information concerning the state of the account. It is especially valuable in connection with personal accounts, particularly those kept by a bank with its customers, where immediate information is essential. Such rulings have a further advantage in doing away with some of the rather cumbersome forms of ruling off and balancing an account, the saving in time and space in this regard offsetting to some extent the additional labor of indicating the new balance after each transaction.

There is also a tendency to eliminate unnecessary detail from the Ledger entries, it being more economical to make an occasional reference to some other record than to transcribe all the details, most of which serve no purpose, in the Ledger. The regulation on which the older writers insisted that each Ledger entry should give the name of the other account—religiously preceded by the formula "To" or "By"—in which the counter entry appeared, became impossible so far as totals only were posted. It is now recognized as altogether needless. The custom was doubtless once useful. The older bookkeeping technic verified the accuracy of the Ledger, not by taking a trial balance but by checking each Debit against its corresponding Credit. When this was done it was of great assistance

to have easy reference from one account to the other, and this was conveniently given by including in each Ledger entry both the name and the folio number of the account in which the corresponding entry appeared. Bookkeepers long since found it was more useful to refer to the Journal page containing the original entry than to the page containing the balancing Ledger entry. But the entry of the name of the Ledger account long persisted, and is even now inculcated in some text-books. The absurdity of clinging to this convention is greatest when the corresponding entry is not found in a single account but in several, when convention demanded that the Ledger should bear the meaningless reference to "Sundries." But while reference to the corresponding account is still general in Continental practice, and is doubtless frequently found even in this country, it is no longer considered necessary by American accountants. In this respect, as in the avoidance of the needless labor of actually closing out all ledger accounts into a Balance Account, American practice shows good sense in lessening the drudgery of bookkeeping without making its record of business transactions less valuable to the proprietor.

A more important improvement in the form of the Ledger has been the substitution of cards or loose leaves in the place of a bound book. The advantages of this are:

The elimination of dead accounts.

The ease of reference, the accounts being self-indexing.

The nice adjustment to accounts of varying lengths, without overcrowding or wasting of blank pages.

The ease of expansion with a growing business.

The facility with which the accounts may be divided up so that many clerks can work simultaneously.

Unfortunately some prejudice has existed against the innovation on the ground that it makes fraud more easy. Indeed, the careful prescription of some laws, such as the

Code de Commerce of France, to the effect that legal validity can attach only to accounts kept in bound books with serially numbered pages certified by a public official, have been a positive bar to the introduction of card ledgers, which elsewhere have been less absolutely opposed by conservatism and prejudice.

While the advocates, and especially the manufacturers of loose-leaf systems, vehemently deny that a bound ledger is any more secure, their claims seem somewhat exaggerated. It is true that the Ledger at best is not the authoritative record, yet the falsification of the Ledger is not an unusual method of concealing fraud. Even the keeping of Ledgers, duplicate except in some doctored accounts, has been resorted to by those wishing to hide their frauds. Certainly such manipulation can be more easily accomplished where each account is on a separate sheet or card. But on the other hand the same precautions which should be observed to prevent fraudulent manipulation of bound books would also prevent fraud in handling a loose-leaf system. In either case there is no security without a careful system of auditing, and where this is provided frauds will be prevented because of the certainty that they will be discovered. Certainly the use of Card Ledgers has made great advances since they were first introduced in 1889 by Mr. J. A. Langstroth, the accomplished accountant of the San Francisco Savings Union. The advantages far outweigh any possible objections to the system.

There has been considerable controversy as to the relative merits of cards and loose leaves temporarily bound in a holder. Universal preference should be given neither to one nor the other. Where there are a vast number of accounts with infrequent entries in each, as for instance in a great savings bank, separate cards seem to have the advantage. In other cases the Loose-Leaf Ledger is more easy to handle, less time being consumed in turning pages than

in taking out and returning the card. Thus a savings bank may wisely keep its depositors' accounts on cards while its General Ledger accounts are kept in a Loose-Leaf Ledger. The relative merits of competing devices for holding the loose leaves need not be discussed here. The interested reader can easily obtain unlimited advertising matter on the subject.

The use of cards has been of great service in other lines of accounting than as a ledger. Particularly true is this in keeping track of maturing notes, interest payments, insurance, contracts on hand, unfilled orders, etc. They serve also to keep a continuous record or inventory of merchandise or material on hand, each class of article being listed on a separate card. This furnishes a record of quantities of stock, parallel with the ledger accounts showing values, and constitutes a most valuable check on the accuracy of the inventory, and on the pilfering tendency of employees. For use in such subsidiary records, outside of the accounting system in the strict sense, cards have proved indispensable.

3. So much of the labor of accounting consists in the performance of arithmetical calculations that the introduction of mechanical devices for doing this work is one of the marked improvements in bookkeeping technic. The more important instruments of this kind fall into three groups: (1) adding machines, (2) "calculating" machines, designed primarily for multiplying and dividing, and (3) the mechanical tabulator.

Foremost among these are the mechanical devices for adding. Of these three groups may be mentioned: (1) Those in which the addition is performed by the operator moving a part of the instrument for each digit to be added, the distance through which the moving part passes corresponding to the value of the digit; (2) those in which the addition is performed by pressing a key indicating the de-

sired digit; and (3) machines similarly operated by keys but listing the items at the same time that they are added.

The first class of instruments have considerable vogue, due to their portability and cheapness. To accomplish the result various mechanical devices are used, such as the rotation of wheels, the revolving of endless chains bearing numbered links, and the sliding of bars. In these instruments the carrying of tens to the next higher order of digits is automatically performed. Many such adding machines are in the market, costing from one to twenty-five dollars, each of which has its own advocates. But all of these are relatively inefficient as compared with key-operated machines.

In the key-adding machines the pressing of a separate key bearing the appropriate digit serves to make the proper addition, with, of course, great increase in both speed of operation and price of machine as compared with the simpler type of adding machine. The use of such key machines is rapidly increasing. In some large establishments special operators are provided whose duty it is to go from desk to desk as occasion requires, and perform the additions demanded in the several departments. While the speed of adding figures already listed in a column may not be much greater when performed by an operator on an adding machine than when done by a highly skilled bookkeeper, the cost of having the work done is much less because of the lower grade labor that can operate the machine.

The listing machine is arranged on practically the same line as the nonlisting key machine, but is accompanied with a device for printing the item at the same time that it is added. Many machines of this type, differing in detail but very similar in form and operation, are on the market.

Considerable rivalry exists between the advocates of listing and nonlisting adding machines. As a matter of fact they are not truly rivals, each being appropriate for its particular service. The nonlisting machine performs

the adding operations much more rapidly than can be done on the listing machine. Where the figures to be added are already listed it is, therefore, best adapted. The only objection to be made is the supposedly greater ease in detecting errors where a listing machine is used, as the items can be checked off from the list. But with a little practice mistakes in either type of machine are infrequently made, and it is but little slower to verify additions by repeating the operation on a nonlisting machine than it is to check off the printed list against the original items. But where a list of items needs to be made, it is evident that the listing machine has no fear of rivalry from the nonlisting machine. The nonlisting machine has, however, an advantage for certain kinds of work in that it lends itself readily to simple operations of multiplication, and less readily to division, operations which are similarly performed on a listing machine but with a relative disadvantage in speed greater than that in adding.

The second type of mechanical aids is the calculating machine or, more concretely, a device for performing multiplication and division. Earliest of these is the slide rule, a device long since introduced into engineering but rather slowly adopted by accountants. The slide rule, in its various forms, whether a simple rule, or in the circular, spiral, or cylindrical forms is a logarithmic scale, that is, a scale so ruled that addition is substituted for multiplication. Thus, for instance, on a given scale 3 is indicated at a point one inch from the left-hand end of the rule. But the value indicated at a point one inch further along is not 6, but 9; the addition of the second inch on the scale not adding 3 but multiplying by that number. Similarly, division is performed by simple subtraction. The application of this principle is very wide. It is especially serviceable in working out percentages. The slide rule is the most convenient of all instruments for working out values where one factor is

a constant, as for instance in translating a table of prices from one currency into another. Here only one setting of the machine is needed, the various values being read off without further manipulation of the slide. In this there is an advantage even over the more mechanical calculating machines. The chief objection is that there is required some little practice in taking off accurate readings, and at best these are not accurate beyond the fifth significant figure. To accountants, who are accustomed to have their additions prove to the last cent, that is, to show accuracy say to the tenth figure, this seems at first objectionable. It should, however, be borne in mind that the original data on which calculations are made rarely are accurate beyond the third figure, so that for most purposes the slide rule is sufficiently exact.

Multiplication being only addition on a larger scale, the key machines, designed primarily for addition, prove most serviceable for multiplication, with certain limitations. If, for instance, 123 is to be multiplied by 321, it can probably be done more quickly on the key-adding machine than on any other mechanical device. All that is necessary is to press the keys indicating 123 once, then moving the fingers one place to the left to press the keys twice (that is, multiply 1230 by 2, which is equivalent to multiplying 123 by 20), and so on. This requires no setting up of a machine, and no skill in reading results. The drawback comes when the two factors are large, as the difficulty of manipulating the larger number of keys more than offsets the time required to set up the factors on a calculating machine proper.

Of the latter there are several models, principally of foreign manufacture. In the most advanced type the multiplicand is set up by moving sliding indexes, and the multiplication is performed by moving an indicator to each of the successive figures of the multiplier and turning the

handle once for each digit. These machines are made with a capacity of eight digits in both multiplier and multiplicand, and sixteen figures in the quotient. After the operation is performed the dials exhibit multiplier and multiplicand, as well as product—thus checking against errors. Division can also be performed, but less conveniently. The advantage of this type of calculating machine is that it is accurate to the last figure, even when applied to factors containing so many digits. Such minute accuracy is more demanded in astronomical calculations, for instance, than in commercial accounting, but nevertheless such machines are being increasingly used in large establishments, such as railroads and factories, principally for working out percentages.

The last type of mechanical aid to be mentioned is the mechanical tabulator. This is a device first introduced into the United States Census Office for tabulating census returns. The method used is that of punching holes in cards, the location of the hole indicating certain statistical facts, as for instance the number of the job, the number of the workman, the terms on which the work is done, the time consumed, etc. By running the cards thus punched through an electrical machine, a device, which works by an electrical connection being made wherever the hole is punched, indicates the various charges made for each job or each part of the operation. This system has been used by some of the railroads, for instance, the New York Central, and by some of the larger manufacturing plants.

So far have been described some of the more important technical improvements by which the labor of bookkeeping has been lessened. Parallel with these improvements, and in part logically implied in the improvements themselves, there has been a continuous progress by which accounting practice is brought into closer coördination with the changing economic conditions. Indeed, it is no mere accident

that systematic bookkeeping first appeared in the Italian republics and during the period of their commercial supremacy. It was not until commerce began to assume importance that systematic accounting became important, and hence it naturally appeared at the time and in the place where commerce, in any modern sense, first began. Some of the minor technical improvements described in this chapter are seen to be conditioned on the change in economic environment, as for instance when the establishment of uniform currency made obsolete the forms which were used when the coinage was in a state of chaos.

The greatest impetus to formal accounting has, however, been due to more recent economic changes, two factors of which, distinct yet closely connected being especially important. These are the introduction of machine production, due to the great inventions centering around iron and steam, and the development of the corporate form of industry.

Taken together these two factors have made exact accounting necessary, for three reasons: (1) Ownership has been separated to a large extent from management of industry and there has been an imperative need for a scheme of accounting which would disclose to the stockholders the status of the business entrusted by them to the directors; (2) the large scale on which business has been conducted has made accounting more complicated and hence has led to greater systematization in its methods; and (3) the use of fixed capital, assuming unheard of proportions since the great inventions, has made necessary accounting methods which would regard changes covering long periods of time, a marked contrast to the simple enterprises of the middle age when capital changes were disregarded.

Of less importance may be mentioned the effect of the general growth of the credit system, necessitating a closer scrutiny of business transactions; and the disappearance of

the old prejudice against interest, with the consequent recognition of interest calculations in inventory taking and in cost accounting.

The accounting problems of to-day as discussed in this book may be seen to be closely dependent on the economic changes mentioned above. Most of the debated questions have had to do with the Balance Sheets of corporations, and the problems concerning Capital Stock. The most puzzling question concerning Profits has related to the treatment of changes in the value of invested capital and the recognition of depreciation in machinery. And the new problem of Cost Accounting, the most recent contribution to accounting literature, is entirely an outgrowth of the factory system of production.

It is apparent, therefore, that accounting never has been a stationary art, but has changed with changing conditions. Altogether wrong is the quaint panegyric of North, written in 1714:

"I do not know, that any Art practiced among Men is come up to a positive *ne plus ultra*, but that of Accompting. . . . No Limit of Invention is known, thro' which they [the other Arts] may be improved. But the Art of Regular Accompting, or Book-keeping, altho' useful beyond any, and of infinite Variety, and of which not a few, able enough in other things, are utterly incapable; yet in Rule and Method is so contracted and circumscribed, that without a Fault, nothing can be rescinded from, or added to it."

While accounting does, indeed, rest on a few simple principles enunciated while Columbus was still on his voyages of discovery, yet much needed to be added to the simple rules laid down by the "humble professor of sacred theology" before the art could reach the present advanced but still incomplete stage of Modern Accounting.

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